DOCUMENT RESUME

ED 126 270 CE 007 294

AUTHOR Byler, Bennie L.
TITLE A Comparative Study of Differences in Selected Factors Related to Educational and Occupational Decision-Making Between On-Farm and Off-Farm Vocational Agriculture Students.
INSTITUTION Iowa State Univ. of Science and Technology, Ames. Dept. of Agricultural Education.
SPONS AGENCY Iowa Agricultural and Home Economics Experiment Station, Ames.
PUB DATE 76
NOTE 151p.; For related document, see CE 007 295

EDRS PRICE MF-$0.83 HC-$8.69 Plus Postage.
DESCRIPTORS Achievement Tests; Career Planning; *Comparative Analysis; Data Analysis; *Decision Making; *High School Students; *Occupational Aspiration; Occupational Choice; Parent Influence; Questionnaires; Residential Patterns; Rural Farm Residents; *Student Characteristics; *Vocational Agriculture
IDENTIFIERS Iowa

ABSTRACT

The study was conducted to determine if there are differences in selected factors related to educational and occupational decision-making between vocational agriculture students who live on a farm and those who do not. The comparison is based on the students' educational and occupational plans; differences in selected personal, family, and community variables related to educational and occupational decision making; and differences in level of achievement in agriculture based on the Peterson Agribusiness Achievement Test. The population for the study consisted of 633 junior and senior students enrolled in 30 Iowa high schools with vocational agriculture programs. Data were collected using a personal, family, and community data questionnaire and a four-part agribusiness achievement test. A detailed report of the returns is presented, with supporting tables, item by item discussion, and statistical analysis. The findings indicated differences in some of the factors related to educational decision-making between on-farm and off-farm vocational agriculture students. Fourteen recommendations are discussed and references are included. The questionnaire, communications, list of participating schools, and the tables of means and standard deviation for the research instruments are appended. (Author/EC)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

ED126274

A COMPARATIVE STUDY OF DIFFERENCES IN SELECTED FACTORS RELATED TO EDUCATIONAL AND OCCUPATIONAL DECISION-MAKING BETWEEN ON-FARM AND OFF-FARM VOCATIONAL AGRICULTURE STUDENTS

by

Bennie L. Byler

Department of Agricultural Education
Iowa State University
Ames, Iowa

The research reported herein was completed
as a part of Project 1879 of the

Iowa Agriculture and Home Economics
Experiment Station

Iowa State University
Ames, Iowa

CE007294

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ACKNOWLEDGMENTS

The author of this report wishes to express his appreciation to a number of individuals who have provided much assistance in conducting this project. Sincere thanks go to Tom Archer for his assistance in collecting and analyzing the data for the project. The author would like to thank Winston Haye and Mark Patton for their assistance in scoring and tabulating the data.

Gratitude is extended to the vocational agriculture instructors and students who participated in the study.

The author would also like to express his appreciation to the Agricultural Education Department Staff for their advice and assistance in conducting the project. The author is also grateful to Roy Hickman for providing the technical assistance needed in using the computer facilities to analyze the data.

TABLE OF CONTENTS

	Page
INTRODUCTION	1
Statement of the Problem	2
Purpose of Study	3
Independent Variables	4
Dependent Variables	4
Hypotheses	4
EXECUTION OF STUDY	8
Design	8
Population	8
Sample	8
Instrumentation	9
Research Procedures	12
Analysis of Data	15
PRESENTATION AND ANALYSES OF DATA	15
Number and Percentage of On-Farm and Off-Farm Vocational Agriculture Students	16
Personal, Family and Community Variables Related to the Educational and Occupational Plans of Vocational Agriculture Students	17
Students' Level of Achievement in Agriculture	78
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	85
Summary of Findings	86
Conclusions	97
Limitations	106
Recommendations	107
APPENDICES	115

LIST OF TABLES

Page

Table 1. Number of junior and senior students and percentage of combined grade levels grouped by place of residence - 16

Table 2. Chi-square test for relationship between students' grade level and students' place of residence - - - - - - - - - 18

Table 3. Analysis of variance summary table for number of semesters of vocational agriculture completed, between on-farm and off-farm vocational agriculture students - 19

Table 4. Means and standard deviations for semesters of vocational agriculture completed by students grouped according to their place of residence- - - - - - - - - 19

Table 5. Analysis of variance summary table for grades received in vocational agriculture, between on-farm and off-farm vocational agriculture students - - - - - - - - - 20

Table 6. Mean responses for types of grades normally received in vocational agriculture by students grouped according to their place of residence- - - - - - - - - 21

Table 7. Frequencies and percentages for response alternatives to grades normally received in vocational agriculture by students grouped according to their place of residence - 22

Table 8. Analysis of variance summary table for grades received in all courses, between on-farm and off-farm vocational agriculture students - - - - - - - - - - - - - 23

Table 9. Means responses for types of grades normally received in all courses by students grouped according to their place of residence- - - - - - - - - - - - - 23

Table 10. Frequencies and percentages for response alternatives to grades normally received in all courses by students grouped according to their place of residence- 24

Table 11. Chi-square test for relationship among kinds of activities students participated in and students' place of residence - 25

Table 12. Chi-square test for relationship between student's place of residence and student's occupational choice - - - - 27

LIST OF TABLES

Page

Table 13. Chi-square test for the relationship between student's place of residence and student's educational plans - 29

Table 14. Analysis of variance summary table for amount of further education beyond high school planned by students, between on-farm and off-farm vocational agriculture students - 30

Table 15. Means and standard deviations regarding number of years of further education planned by students, for students grouped by place of residence - - - - - - - - - - - - 31

Table 16. Chi-square test for relationship between student's responses regarding extent of working while in high school and student's place of residence- - - - - - - - - - - - 31

Table 17. Chi-square test for relationship between "significant others" influencing student's occupational choice and student's place of residence - - - - - - - - - - - - - - - 33

Table 18. Analysis of variance summary table for amount of certainty regarding occupational choice, between on-farm and off-farm vocational agriculture students - - - - 35

Table 19. Means and standard deviations regarding amount of certainty for occupational choice, for students grouped by their place of residence- - - - - - - - - - - - - 35

Table 20. Analysis of variance summary table for amount of thought given to choice of occupation, between on-farm and off-farm vocational agriculture students - - - - 36

Table 21. Means and standard deviations regarding amount of thought given to occupational choice, for students grouped by their place of residence- - - - - - - - - - - - - 37

Table 22. Analysis of variance summary table for students' perception of ability to perform selected occupation, between on-farm and off-farm vocational agriculture students - 38

Table 23. Means and standard deviations regarding students' perception of ability to perform selected occupation, for students grouped by their place of residence - - - - - - 38

Table 24. Analysis of variance summary table for amount of work experience in occupation planning to enter, between on-farm and off-farm vocational agriculture students - - - - 39

LIST OF TABLES

Page

Table 25. Means and standard deviations regarding amount of work experience in occupation planning to enter, for students grouped by their place of residence - - - - - - - 40

Table 26. Analysis of variance summary table for students' perception of knowledge of occupation planning to enter, between on-farm and off-farm vocational agriculture students - 41

Table 27. Means and standard deviations regarding students' perception of knowledge of occupation planning to enter, for students grouped by their place of residence- 41

Table 28. Analysis of variance summary table for students' perception of value of high school training for occupation planning to enter, between on-farm and off-farm vocational agriculture students - - - - - - - - - - 42

Table 29. Means and standard deviations regarding students' perception of value of high school training for occupation planning to enter, for students grouped by their place of residence- - - - - - - - - - - - - - - - - - 43

Table 30. Analysis of variance summary table for students' perception of amount of training high school has provided for occupation planning to enter, between on-farm and off-farm vocational agriculture students - - - - 44

Table 31. Means and standard deviations regarding students' perception of amount of training high school had provided for occupation planning to enter, for students grouped by their place of residence - - - - - - - - 45

Table 32. Analysis of variance summary table for amount of encouragement student had received from father to continue education beyond high school, between on-farm and off-farm vocational agriculture students - - - - 46

Table 33. Means and standard deviations regarding amount of encouragement received from father to continue education beyond high school, for students grouped by their place of residence- - - - - - - - - - - - - - - - - - 46

Table 34. Analysis of variance summary table for amount of encouragement student had received from mother to continue education beyond high school, between on-farm and off-farm vocational agriculture students - - - - - - - - 47

LIST OF TABLES

Page

Table 35. Means and standard deviations regarding amount of encouragement received from mother to continue education beyond high school, for students grouped by their place of residence - - - - - - - - - - - - - - - - - - 47

Table 36. Analysis of variance summary table for amount of encouragement student had received from father to attend an area vocational school, between on-farm and off-farm vocational agriculture students - - - - - - - - - 48

Table 37. Means and standard deviations regarding amount of encouragement received from father to attend an area vocational school, for students grouped by their place of residence - 49

Table 38. Analysis of variance summary table for amount of encouragement student had received from father to attend a four-year college or university, between on-farm and off-farm vocational agriculture students - - - - 49

Table 39. Means and standard deviations regarding amount of encouragement student had received from father to attend a four-year college or university, for students grouped by their place of residence - - - - - - - - - 50

Table 40. Analysis of variance summary table for amount of encouragement student had received from mother to attend an area vocational school, between on-farm and off-farm vocational agriculture students - - - - - - - - - 51

Table 41. Means and standard deviations regarding amount of encouragement student had received from mother to attend an area vocational school, for students grouped by their place of residence- - - - - - - - - - - - - - 51

Table 42. Analysis of variance summary table for amount of encouragement student had received from mother to attend a four-year college or university, between on-farm and off-farm vocational agriculture students - - - - 52

Table 43. Means and standard deviations regarding amount of encouragement student had received from mother to attend a four-year college or university, for students grouped by their place of residence - - - - - - - - - 53

Table 44. Analysis of variance summary table for amount of encouragement student had received from vo-ag instructor to attend an area vocational school, between on-farm and off-farm vocational agriculture students - - - - - - - - - 54

LIST OF TABLES

Page

Table 45. Means and standard deviations regarding amount of encouragement student had received from vo-ag instructor to attend an area vocational school, for students grouped by their place of residence - - - - - - - - - 54

Table 46. Analysis of variance summary table for amount of encouragement student had received from vo-ag instructor to attend a four-year college or university, between on-farm and off-farm vocational agriculture students - 55

Table 47. Means and standard deviations regarding amount of encouragement student had received from vo-ag instructor to attend a four-year college or university, for students grouped by their place of residence- 56

Table 48. Analysis of variance summary table for students' perception of value of high school vo-ag courses completed in preparing for occupation planning to enter, between on-farm and off-farm vocational agriculture students - 57

Table 49. Means and standard deviations regarding students' perception of value of high school vo-ag courses completed in preparing for occupation planning to enter, for students grouped by their place of residence- 57

Table 50. Analysis of variance summary table for students' perception of value of FFA program in preparing for occupation planning to enter, between on-farm and off-farm vocational agriculture students - - - - - - - - - - - 58

Table 51. Means and standard deviations regarding students' perception of value of FFA program in preparing for occupation planning to enter, for students grouped by their place of residence- - - - - - - - - - - - - - - - - - 59

Table 52. Analysis of variance summary table for students' perception of value of vo-ag courses completed in preparing to attend an area vocational school, between on-farm and off-farm vocational agriculture students - 60

Table 53. Means and standard deviations regarding students' perception of value of vo-ag courses completed in preparing to attend an area vocational school, for students grouped by their place of residence - - - - - - - - - 60

LIST OF TABLES

Page

Table 54. Analysis of variance summary table for students' perception of value of vo-ag courses completed in preparing to attend a four-year college or university, between on-farm and off-farm vocational agriculture students - 61

Table 55. Means and standard deviations regarding students' perception of value of vo-ag courses completed in preparing to attend a four-year college or university, for students grouped by their place of residence- 62

Table 56. Analysis of variance summary table for students' perception of value of high school courses completed in preparing to attend an area vocational school, between on-farm and off-farm vocational agriculture students - 63

Table 57. Means and standard deviations regarding students' perception of value of high school courses completed in preparing to attend an area vocational school, for students grouped by their place of residence - - - - - - - 63

Table 58. Analysis of variance summary table for students' perception of value of high school courses completed in preparing to attend a four-year college or university, between on-farm and off-farm vocational agriculture students - 64

Table 59. Means and standard deviations regarding students' perception of value of high school courses completed in preparing to attend a four-year college or university, for students grouped by their place of residence- 65

Table 60. Analysis of variance summary table for students' perception of value of supervised occupational experience program in preparing for occupation planning to enter, between on-farm and off-farm vocational agriculture students- - - - - - - - - - - - - - - - - 66

Table 61. Means and standard deviations regarding students' perception of value of supervised occupational experience program in preparing for occupation planning to enter, for students grouped by their place of residence - 66

Table 62. Analysis of variance summary table for students' perception of chance of success as a student if attended a four-year college or university in animal science, between on-farm and off-farm vocational agriculture students - 67

LIST OF TABLES

Page

Table 63. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in animal science, for students grouped by their place of residence - - - - - - - - - 63

Table 64. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university in plant and soil science, between on-farm and off-farm vocational agriculture students- - - - - - - - - - - - - - - - 69

Table 65. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in plant and soil science, for students grouped by their place of residence- 69

Table 66. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university in agricultural mechanics, between on-farm and off-farm vocational agriculture students - - - - - - - - - - - - 70

Table 67. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in agricultural mechanics, for students grouped by their place of residence- 71

Table 68. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university in agricultural management, between on-farm and off-farm vocational agriculture students - - - - - - - - - - - - 72

Table 69. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in agricultural management, for students grouped by their place of residence- 72

Table 70. Analysis of variance summary table for students perception of chances of success as a student if attended an area vocational school in animal science, between on-farm and off-farm vocational agriculture students - - - - 73

Table 71. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in animal science, for students grouped by their place of residence- - - - - - - - - - - - - 73a

LIST OF TABLES

Page

Table 72. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in plant and soil science, between on-farm and off-farm vocational agriculture students - 74

Table 73. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in plant and soil science, for students grouped by their place of residence - - - - - - - - - 75

Table 74. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in agricultural mechanics, between on-farm and off-farm vocational agriculture students - 76

Table 75. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in agricultural mechanics, for students grouped by their place of residence - - - - - - - - - 76

Table 76. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in agricultural management, between on-farm and off-farm vocational agriculture students - 77

Table 77. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in agricultural management, for students grouped by their place of residence - - - - - - - 78

Table 78. Analysis of variance summary table for animal science achievement test scores, between on-farm and off-farm vocational agriculture students - - - - - - - - - - - - 79

Table 79. Mean animal science achievement test scores for students grouped by their place of residence - - - - - - - - - 80

Table 80. Analysis of variance summary table for plant and soil science achievement test scores, between on-farm and off-farm vocational agriculture students- - - - - - 81

Table 81. Mean plant and soil science achievement test scores for students grouped by their place of residence - - - - - - - 81

LIST OF TABLES

Page

Table 82. Analysis of variance summary table for agricultural mechanics achievement test scores, between on-farm and off-farm vocational agriculture students - - - - - - - - - 82

Table 83. Mean agricultural mechanics achievement test scores for students grouped by their place of residence - - - - - - - 83

Table 84. Analysis of variance summary table for agricultural management achievement test scores, between on-farm and off-farm vocational agriculture students - - - - - - - - - 83

Table 85. Mean agricultural management achievement test scores for students grouped by their place of residence- - - 84

Table 86. Means and standard deviations for personal, family and community variables- 131

INTRODUCTION

Considerable transitions have been made in vocational agriculture programs since the passage of the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968. These federal acts provided instructors of vocational agriculture an opportunity to change and expand their programs to prepare high school students for any agricultural occupation in which knowledge and skills in agriculture are required. Prior to the 1963 Vocational Education Act the traditional concept of vocational agriculture was that of preparing farm reared boys to return to farming and ranching occupations.

This legislation which authorized the broadening of instructional programs in agriculture, brought about a tremendous increase in enrollment of vocational agriculture students who live in town rather than on a farm.

The student enrollment in high school off-farm agribusiness programs in the U.S. has increased from 55,000 students in 1965 to a total of 330,603 in 1974. The student enrollment in production agriculture programs has decreased from 461,500 in 1965 to 328,713 in 1974 (6).

The present-day programs in vocational agriculture are more complex than the ones which resulted from earlier legislation. Students enrolled in vocational agriculture have an ever-increasing number of agricultural related occupations from which to choose.

The guidance responsibilities of the vocational agriculture instructor and vocational guidance counselor have increased tremendously with a greater number of agricultural related occupations available to students. The increased opportunities at postsecondary institutions for receiving additional training for these occupations has also brought about greater need to

assist youth in establishing and attaining their educational and occupational goals.

Providing agricultural programs which will meet the needs of both on-farm and off-farm students will continue to present a tremendous challenge to vocational agriculture instructors, administrators and other individuals who are responsible for developing and implementing vocational agriculture programs.

A number of research studies have centered upon vocational agriculture students who live on a farm (on-farm students) and factors influencing their educational and occupational decisions. Considerable research has also been conducted on vocational agriculture students who do not live on a farm (off-farm students) and factors which have an influence upon their educational and occupational decisions. However, available research reveals very little conclusive information which makes a comparative analysis of differences in factors related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students.

Statement of the Problem

In recent years considerable changes have been made in the vocational agriculture programs of Iowa. The transitions and expansion of these programs have resulted in an increased enrollment by high school students who do not reside on a farm. The increase in number of off-farm students has brought about a need to determine if there are differences in selected factors related to educational and occupational decision-making between vo-ag students who live on a farm and those who do not live on a farm.

The major purpose of this study was to determine if there are differences

in selected factors related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students. Such information should provide assistance for developing programs, materials and curricular offerings to assist youth in attaining their educational and occupational goals.

Purpose of Study

The primary purpose of this study was to determine if there are differences in selected factors related to educational and occupational decision-making between the following groups of high school students:

Group 1 - Vocational agriculture students who lived on a farm.[a]

Group 2 - Vocational agriculture students who did not live on a farm.[b]

The specific objectives of this research were as follows:

A. Determine the educational and occupational plans of high school junior and senior vocational agriculture students.

B. Determine if there are differences in selected personal, family and community variables related to educational and occupational decision-making, between on-farm and off-farm high school vocational agriculture students.

C. Determine if there are differences in level of achievement in agriculture as measured by the Peterson Agribusiness Achievement Test, between on-farm and off-farm high school vocational agriculture students.

---

[a]This group of students will be referred to as on-farm vocational agriculture students.

[b]This group of students will be referred to as off-farm vocational agriculture students.

Independent Variables

The following independent variables were identified for this research study:

A. Personal, family and community variables related to educational and occupational decision-making.

B. Level of achievement in the following areas of agriculture:

1. Animal science.
2. Plant and soil science.
3. Agricultural mechanics.
4. Agricultural management.

Dependent Variables

The following dependent variables were identified for this study:

A. Student's place of residence was on a farm.

B. Student's place of residence was not on a farm.

Hypotheses

The research hypotheses identified for this study are as follows:

Hypothesis 1. There will be significant differences in selected personal, family and community variables related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students. The variables to be tested were as follows:

1. Grade level.
2. Semesters of vocational agriculture completed.
3. Grades received in vocational agriculture.
4. Grades received in all courses.
5. Participation in high school activities.

6. Occupational plans.
7. Educational plans.
8. Years of posthigh school education planned.
9. Work experience while in high school.
10. "Significant others" influencing occupational choice.
11. Amount of certainty regarding occupational choice.
12. Amount of thought given to occupational choice.
13. Ability for occupation planning to enter.
14. Amount of work experience in occupation planning to enter.
15. Knowledge of occupation planning to enter.
16. Value of high school training for occupation planning to enter.
17. Amount of training high school has provided for occupation planning to enter.
18. Amount of encouragement to continue education received from father.
19. Amount of encouragement to continue education received from mother.
20. Amount of encouragement received from father to attend an area vocational school.
21. Amount of encouragement received from father to attend a four-year college or university.
22. Amount of encouragement received from mother to attend a post-secondary area vocational school.
23. Amount of encouragement received from mother to attend a four-year college or university.

24. Amount of encouragement received from vo-ag instructor to attend a postsecondary area vocational school.
25. Amount of encouragement received from vo-ag instructor to attend a four-year college or university.
26. Value of high school vo-ag courses completed in preparing for occupation planning to enter.
27. Value of FFA program in preparing for occupation planning to enter.
28. Value of vo-ag courses completed in preparing to attend a post-secondary area vocational school.
29. Value of vo-ag courses completed in preparing to attend a four-year college or university.
30. Value of high school courses in preparing to attend a post-secondary area vocational school.
31. Value of high school courses in preparing to attend a four-year college or university.
32. Value of supervised occupational experience program in preparing for occupation planning to enter.
33. Chances of success as student attending a four-year college or university in animal science.
34. Chances of success as student attending a four-year college or university in plant and soil science.
35. Chances of success as student attending a four-year college or university in agricultural mechanics.
36. Chances of success as a student attending a four-year college or university in agricultural management.

37. Chances of success as a student attending a postsecondary area vocational school in animal science.
38. Chances of success as a student attending a postsecondary area vocational school in plant and soil science.
39. Chances of success as a student attending a postsecondary area vocational school in agricultural mechanics.
40. Chances of success as a student attending a postsecondary area vocational school in agricultural management.

Hypothesis 2. There will be significant differences in Animal Science Achievement Test scores between on-farm and off-farm vocational agriculture students.

Hypothesis 3. There will be significant differences in Plant and Soil Science Achievement Test scores between on-farm and off-farm vocational agriculture students.

Hypothesis 4. There will be significant differences in Agricultural Mechanics Achievement Test scores between on-farm and off-farm vocational agriculture students.

Hypothesis 5. There will be significant differences in Agricultural Management Achievement Test scores between on-farm and off-farm vocational agriculture students.

EXECUTION OF STUDY

The primary objective of this research study was to determine if there are differences in selected factors related to educational and occupational decision-making between vocational agriculture students who lived on a farm and vocational agriculture students who did not live on a farm.

Design

The design of this research study was basically an ex post facto design as described by Campbell and Stanley (3).

Population

The population for this study consisted of all junior and senior students enrolled in secondary vocational agriculture programs in Iowa. According to the Summary of Educational Activities in Agriculture/Agribusiness Provided by Local School Districts there were a total of 231 high school vocational agriculture departments with an enrollment of 15,589 during the 1973-74 school year (10).

Sample

A sample of thirty public schools from all of the high schools in Iowa which provided vocational agriculture programs in 1974-75 were selected to participate in the research study.

In completing the instruments, each student was expected to indicate his/her place of residence. Based upon the student's place of residence, the following groups were identifed and studied:

Group 1 - Vocational agriculture students who lived on a farm (on-farm students).

Group 2 - Vocational agriculture students who did not live on a farm (off-farm students).

Instrumentation

The instruments used in collecting the data for this study are as follows:

A. Personal, Family and Community Data Related to the Educational and Occupational Plans of Iowa Vocational Agriculture Students (see Appendix A). This instrument was developed to assess the personal, family and community variables related to educational and occupational plans of high school vocational agriculture students. The variables which this instrument is designed to assess are as follows:

1. Grade level.
2. Semesters of vocational agriculture completed.
3. Grades received in vocational agriculture.
4. Grades received in all courses.
5. Participation in high school activities.
6. Occupational plans.
7. Educational plans.
8. Years of posthigh school education planned.
9. Work experience while in high school.
10. "Significant others" influencing occupational choice.
11. Amount of certainty regarding occupational choice.
12. Amount of thought given to occupational choice.
13. Ability for occupation planning to enter.
14. Amount of work experience in occupation planning to enter.

15. Knowledge of occupation planning to enter.
16. Value of high school training for occupation planning to enter.
17. Amount of training high school has provided for occupation planning to enter.
18. Amount of encouragement to continue education received from father.
19. Amount of encouragement to continue education received from mother.
20. Amount of encouragement received from father to attend a area vocational school.
21. Amount of encouragement received from father to attend a four-year college or university.
22. Amount of encouragement received from mother to attend a postsecondary area vocational school.
23. Amount of encouragement received from mother to attend a four-year college or university.
24. Amount of encouragement received from vo-ag instructor to attend a postsecondary area vocational school.
25. Amount of encouragement received from vo-ag instructor to attend a four-year college or university.
26. Value of high school vo-ag courses completed in preparing for occupation planning to enter.
27. Value of FFA program in preparing for occupation planning to enter.
28. Value of vo-ag courses completed in preparing to attend a

postsecondary area vocational school.

29. Value of vo-ag courses completed in preparing to attend a four-year college or university.
30. Value of high school courses in preparing to attend a post-secondary area vocational school.
31. Value of high school courses in preparing to attend a four-year college or university.
32. Value of supervised occupational experience program in preparing for occupation planning to enter.
33. Chances of success as student attending a four-year college or university in animal science.
34. Chances of success as student attending a four-year college or university in plant and soil science.
35. Chances of success as student attending a four-year college or university in agricultural mechanics.
36. Chances of success as a student attending a four-year college or university in agricultural management.
37. Chances of success as a student attending a postsecondary area vocational school in animal science.
38. Chances of success as a student attending a postsecondary area vocational school in plant and soil science.
39. Chances of success as a student attending a postsecondary area vocational school in agricultural mechanics.
40. Chances of success as a student attending a postsecondary area vocational school in agricultural management.

B. Agribusiness Achievement Test. This instrument developed by Peterson, et al. (8) was selected to assess vocational agriculture students' achievement in the following areas of agriculture:

1. Animal Science.
2. Plant and Soil Science.
3. Management.
4. Mechanics.

Research Procedures

A sample of thirty public schools from all of the high schools in Iowa which provided vocational agriculture programs in 1974-75 were selected to participate in this research study. Using the 1974-75 list of vocational agriculture departments (4) these schools were listed according to the area vocational school district in which they were located. Using a table of random numbers, two high schools were selected at random from each of the fifteen area school districts to comprise the sample of thirty schools selected to participate in the research.

Upon selection of the sample, the vocational agriculture instructor of each school was informed of the study by letter (see Appendix B) to seek agreement for his vocational agriculture department to participate in the study. Alternative schools were selected to replace those who would not agree to participate in the study. Only two schools from the original sample of thirty schools did not agree to participate.

Upon receiving approval from thirty schools, (see Appendix C) the research project staff contacted the vocational agriculture instructors of these schools to provide detailed instructions for administering the questionnaire and Agribusiness Achievement Test (see Appendix D).

Each vocational agriculture department participating in the study was mailed a sufficient number of questionnaires and answer sheets for all of the junior and senior students who were currently enrolled in his vocational agriculture classes. The vocational agriculture instructors were asked to administer these instruments during the regular class time to all junior and senior vocational agriculture students between the dates of December 9, 1974 to January 17, 1975. Because of differing lengths and time of class periods among the schools, no attempts were made to coordinate any more than the order of instrument administration.

It was also requested that the instruments be administered on five different days. The first being the questionnaire, followed by the four parts of the Agribusiness Achievement Test in the following order:

1. Animal Science.
2. Plant and Soil Science.
3. Mechanics.
4. Management.

Each of the parts of the Agribusiness Achievement Test took approximately fifty minutes, forty minutes for actual testing.

Each instructor was provided a complete set of standardized directions for the administration of the Agribusiness Achievement Test. To further assist in administering the instruments, the following check list of data collection was provided each instructor:

Check List of Data Collection:

_____(1) Administer the instruments, both the questionnaire and the Achievement Test to your high school junior and senior vocational agriculture students sometime between December 9 and January 17.

_____(2) Administer questionnaire - will take approximately 30 minutes.

_____(3) Have each student complete the Name Block, Grade, Sex, Birth date and School information on his answer sheet. Specific directions for this are given in "The Pre-Test Session" part of the Test Administration directions.

_____(4) Administer the Achievement Test - probably four different days would work best.

a) Animal Science Test - allow approximately fifty minutes.

b) Plant and Soil Science Test - allow approximately fifty minutes.

c) Mechanics Test - allow approximately fifty minutes.

d) Management Test - allow approximately fifty minutes.

_____(5) Return test booklets, answer sheets and completed questionnaires to the Agricultural Education Department, Iowa State University.

_____(6) Review test results with your students - sometime in February.

After all of the instruments were completed by all junior and senior students in vocational agriculture, the test booklets, answer sheets and completed questionnaires were returned to the Department of Agricultural Education, Iowa State University research project staff to begin scoring and analyzing the data.

In completing the questionnaire, each student was requested to indicate his/her place of residence (item number seven of the Personal, Family and Community Data Questionnaire). A student's place of residence became the criteria for which the following groups were identified and studied:

Group 1 - Vocational agriculture students who lived on a farm.

Group 2 - Vocational agriculture students who did not live on a farm.

Analysis of Data

Data from the instruments were tabulated, scored and transferred to IBM cards. The Agribusiness Achievement Tests were hand scored by the research project staff using scoring keys provided by the publisher of the tests. The raw scores of each test were transformed to standard scores for analysis.

The data from these instruments were analyzed utilizing computer facilities at the Computation Center, Iowa State University, Ames, Iowa. The computer programs used in the statistical treatment were designed and prepared by the statistical consultants and the project research assistant. The following programs were utilized:

1. SPSS Correlation and Regression Programs.
2. Helarctos II Regression Program.

PRESENTATION AND ANALYSES OF DATA

The analyses of the data for this study are arranged in a manner which brings attention to the objectives and hypotheses formulated. The analyses of the data are presented under the following headings:

1. Number and percentage of on-farm and off-farm vocational agriculture students.
2. Personal, family and community variables related to the educational and occupational plans of vocational agriculture students.
3. Agribusiness Achievement Test scores.

The statistical analyses of the data consisted of the use of the following statistics: Chi-square distributions and analysis of variance using the F ratio. All hypotheses were tested at the .05 level of probability.

Number and Percentage of On-Farm and Off-Farm Vocational Agriculture Students

Part I of Questionnaire

One of the primary objectives of this part of the research study was to determine the number and percentage of on-farm (students who live on a farm) and off-farm (students who do not live on a farm) vocational agriculture students. Item number seven of the questionnaire (see Appendix A) requested that they complete the following statement:

I live:

1. ( ) on a farm.
2. ( ) in the open country, but not on a farm.
3. ( ) in a village under 2,500.
4. ( ) in a town of 2,500 - 10,000.
5. ( ) in a city over 10,000.

The number of junior and senior vocational agriculture students and percentage of combined grade levels grouped by place of residence are presented in Table 1.

Table 1. Number of junior and senior students and percentage of combined grade levels grouped by place of residence

Group number	Student group	Grade level			
		Junior	Senior	Total	Percent
1	Students who lived on a farm.	287	229	516	81.5
2	Students who did not live on a farm.	74	43	117	18.5
	Total	361	272	633	100.0

Over 81 percent of the junior and senior vocational agriculture students participating in this study indicated that they lived on a farm. About 56 percent of the students living on a farm were juniors and 44.4 percent were seniors. Approximately 63 percent of the students not living on a farm were juniors and about 37 percent were seniors.

Personal, Family and Community Variables Related to the Educational and Occupational Plans of Vocational Agriculture Students

Research hypothesis 1 stated that there will be significant differences in selected personal, family and community variables related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students.

The data utilized in testing this hypothesis were collected using the questionnaire which appears in Appendix A. Forty variables were assessed from the data provided by this questionnaire. Six of the variables were analyzed using chi-square and 36 variables were analyzed using analysis of variance with the F ratio.

Grade level

The participants selected for this study were junior and senior vocational agriculture students from the thirty schools selected to participated.

Students participating in this study were requested to indicate their grade level in high school (item number two of the questionnaire). The frequency and percentage of responses to this variable for each of the student groups are presented in Table 2. The data collected for this variable were analyzed using the chi-square statistic to determine if there is a significant relationship between student's grade level and student's

Table 2. Chi-square test for relationship between students' grade level and students' place of residence

Grade level	Frequency of responses by groups[a] Group 1 No.	%	Group 2 No.	%	Totals No.	%
Junior	287	55.6	74	63.2	361	57.0
Senior	229	44.4	43	36.8	272	43.0
Totals	516	100.0	117	100.0	633	100.0
	Chi-square = 5.68 ns					

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

place of residence. The chi-square value of 5.68 is not significant at the .05 level of probability.

Semesters of vocational agriculture completed

The students participating in this study were asked to indicate the number of semesters of vocational agriculture they had completed including the current semester. The data from this item of the questionnaire were analyzed using a three-way analysis of variance. A summary of the analysis of variance calculation appears in Table 3. The sources of variation that were analyzed were schools, grade level (junior or senior) and place of residence. Because of incomplete questionnaires returned, it was necessary to delete two schools from all calculations where analysis of variance was used to analyze the data.

The analysis of variance for students' responses to this item grouped according to their place of residence resulted in an F ratio of 17.78 which is significant at the .01 level of probability.

Table 3. Analysis of variance summary table for number of semesters of vocational agriculture completed, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	232.29	8.60	5.18**
Student grade level	1	219.99	219.99	132.52**
Student group	1	29.52	29.52	17.78**
Student group X student grade level	1	.31	.31	< 1.0
Within	560	927.90	1.66	

**Significant at the .01 level of probability.

The means and standard deviations for semesters of vocational agriculture completed by on-farm and off-farm students are presented in Table 4.

Table 4. Means and standard deviations for semesters of vocational agriculture completed by students grouped according to their place of residence

Group number	Student group	Number	Mean semesters	Standard deviations
1[a]	Students who lived on a farm.	481	5.58	2.58
2	Students who did not live on a farm.	110	4.76	3.58
	Total	591	5.42	1.69

[a]Mean response for Group 1 is significantly ($P < .01$) greater than the mean response for Group 2.

It was determined that a mean response of 5.58 for students living on a farm (Group 1) is significantly ($P < .01$) greater than the mean response of 4.76 observed for students who were not living on a farm (Group 2). The mean semesters of vocational agriculture completed by the total group was 5.42 which would indicate that the majority of the students in this study had been enrolled in vocational agriculture since their freshman year of school. From the data presented in this table, it may be concluded that on-farm students had completed a greater number of semesters of vocational agriculture than off-farm students.

Grades received in vocational agriculture

Students were requested to indicate the types of grades they normally received in vocational agriculture (item number four of the questionnaire). Results of the three-way analysis of variance used to analyze the responses to this variable are revealed in Table 5.

Table 5. Analysis of variance summary table for grades received in vocational agriculture, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	243.08	9.00	3.21**
Student grade level	1	5.85	5.85	2.09
Student group	1	18.19	18.19	6.49*
Student group X student grade level	1	.76	.76	< 1.0
Within	560	1570.25	2.80	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

The sources of variation analyzed are schools, grade level and student group (grouped by place of residence).

An F ratio of 6.49 was observed for differences in mean responses to this variable between on-farm and off-farm vocational agriculture students. This F ratio with 1 and 560 degrees of freedom is significant at the .05 level of probability.

Table 6 reveals the mean responses and standard deviations for the two student groups.

Table 6. Mean responses for types of grades normally received in vocational agriculture by students grouped according to their place of residence

Group number	Student group	Number	Mean response	Standard deviation
1	Students who lived on a farm.	481	4.38	1.79
2[a]	Students who did not live on a farm.	110	4.83	1.62
	Total	591	4.46	1.77

[a]Mean response for Group 2 is significantly ($P < .05$) greater than the mean response for Group 1.

A mean response of 4.83 for Group 2 is significantly ($P < .01$) greater than the mean response of 4.38 for Group 1. It should be pointed out that a lower mean response to this variable would indicate higher grades received in vocational agriculture.

The frequencies and percentages for each response alternative to this item of the questionnaire are presented in Table 7.

From the analysis of this variable, it may be concluded that students

Table 7. Frequencies and percentages for response alternatives to grades normally received in vocational agriculture by students grouped according to their place of residence

Response alternative	Student group[a]		Total	Percent
	Group 1	Group 2		
1. All A's.	24	2	26	4.4
2. Mostly A's but few B's.	54	7	61	10.4
3. Half A's and B's.	92	16	108	18.4
4. About equal A's, B's and C's.	54	11	65	11.1
5. Mostly B's and C's.	112	31	143	24.4
6. Mostly C's but few B's.	79	28	107	18.2
7. C's and D's.	57	12	69	11.7
8. D's and F's.	6	2	8	1.4
Total	478	109	587	100.0

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

living on a farm indicated they received higher grades in vocational agriculture than those students who were not living on a farm.

Grades received in all courses

This item of the questionnaire asked that students indicate the type of grades they normally get in all courses they are taking. A three-way analysis of variance was used to analyze the data for this variable. A summary of the analysis of variance calculation is presented in Table 8. A significant ($P < .01$) F ratio fo 8.14 was observed for differences in the mean responses to this variable by students grouped according to their

place of residence.

Table 8. Analysis of variance summary table for grades received in all courses, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	189.50	7.02	3.28**
Student grade level	1	.01	.01	<1.0
Student group	1	17.41	17.41	8.14**
Student group X student grade level	1	1.86	1.86	<1.0
Within	560	1199.74	2.14	

**Significant at the .01 level of probability.

The mean responses and standard deviations for each student group are presented in Table 9.

Table 9. Means responses for types of grades normally received in all courses by students grouped according to their place of residence

Group number	Student group	Number	Mean response	Standard deviation
1	Students who lived on a farm.	481	4.99	1.57
2[a]	Students who did not live on a farm.	110	5.49	1.38
	Total	591	5.09	1.55

[a]Mean response for Group 2 is significantly ($P < .01$) greater than the mean response for Group 1.

It was determined that a mean response of 5.49 for Group 2 is significantly ($P < .01$) greater than the mean response of 4.99 for Group 1. It should again be pointed out that a lower mean response for this variable would indicate higher grades normally received in all courses.

The frequencies and percentages for each response alternative to this variable are presented in Table 10.

Table 10. Frequencies and percentages for response alternatives to grades normally received in all courses by students grouped according to their place of residence

Response alternative	Student group[a]		Total	Percent
	Group 1	Group 2		
1. All A's.	8	1	9	1.5
2. Mostly A's but few B's.	21	2	23	3.9
3. Half A's and B's.	59	5	64	10.9
4. About equal A's, B's and C's.	77	20	97	16.4
5. Mostly B's and C's	113	20	133	22.6
6. Mostly C's and few B's.	112	31	143	24.3
7. C's and D's.	82	30	112	19.0
8. D's and F's.	7	1	8	1.4
Total	479	110	589	100.0

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

It may therefore be concluded that students who lived on a farm indicated that they normally received higher grades in all their courses than students who did not live on a farm.

Participation in high school activities

The students participating in this study were requested to indicate the kinds of activities they have participated in while in high school. The frequencies and percentage of responses are summarized in Table 11.

Table 11. Chi-square test for relationship among kinds of activities students participated in and students' place of residence

Kinds of activities	Number students participating by groups: Group 1 No.	Group 1 %	Group 2 No.	Group 2 %	Totals No.	Totals %	Chi-square
Annual	21	4.4	6	5.5	27	4.6	.06
Athletics	241	50.1	47	42.7	288	48.7	1.67
Band	70	14.6	15	13.6	85	14.4	.01
Chorus	69	14.3	8	7.3	77	13.0	3.35
Debate	6	1.2	2	1.8	8	1.4	.00
FFA	430	89.4	73	66.4	503	85.1	35.68***
4-H	156	32.4	14	12.7	170	28.8	16.02***
Hobby	10	2.1	3	2.7	13	2.2	.01
Student government	33	6.9	3	2.7	36	6.1	2.00
Other	82	17.0	17	15.5	99	16.8	.07

Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

***Significant at the .001 level of probability.

The data received from this variable were analyzed using the chi-square statistic to determine the relationship between kinds of activities for which students had participated, and student's place of residence. A

significant ($P < .001$) chi-square value of 35.68 was observed for the relationship between student's participation in the FFA and student's place of residence. Over 89 percent of the students living on a farm indicated that they participated in the FFA. Whereas, only 66.4 percent of the students who were not living on a farm indicated that they participated in the FFA. It should also be pointed out that 85.1 percent of all students responding to this item of the questionnaire indicated that they participated in the FFA.

From this analysis it may be concluded that a relationship does exist between student's participation in the FFA and student's place of residence.

A significant ($P < .001$) chi-square value of 16.02 was observed for the relationship between student's participation in the 4-H Club and student's place of residence. About 32 percent of the students living on a farm indicated they participated in the 4-H Club. Whereas, 12.7 percent of the students who did not live on a farm indicated they participated in 4-H Club. About 30 percent of the total group indicated they participated in the 4-H Club. From the analysis of this variable, it may be concluded that a relationship does exist between student's place of residence and student's participation in 4-H Club.

Occupational plans

Item number eight of the questionnaire requested that students indicate the occupation they plan to enter upon completion of their formal education. The students' occupational choices were then classified under one of the following:

1. On-farm agricultural occupations.
2. Off-farm agricultural occupations.

3. Non-agricultural occupations.

A complete analysis of this variable as a dependent variable may be found in a separate, but related research report.[1] The data received from this variable were analyzed using the chi-square statistic to determine the relationship between student's place of residence and student's occupational choice (Table 12).

Table 12. Chi-square test for relationship between student's place of residence and student's occupational choice

Place of residence	Student's occupational choice: On-farm occupation No.	%	Off-farm occupation No.	%	Nonagricultural occupation No.	%	Totals No.	%
Students who lived on a farm.	291	60.5	81	16.8	109	22.7	481	81.4
Students who did not live on a farm.	32	29.1	21	19.1	57	51.8	110	18.6
Total	323		102		166		591	
	(54.7%)		(17.3%)		(21.8%)			
	chi-square = 43.52***							

***Significant at the .001 level of probability.

Over 54 percent of the students participating in this study indicated they planned to enter an on-farm agricultural occupation upon completion of their formal education. About 17 percent and 22 percent planned to enter off-farm and non-agricultural occupations respectively.

[1] Byler, B.L. and D.A. Kaas. A study of factors associated with the occupational plans of Iowa vocational agriculture students. Ames, Iowa: Department of Agricultural Education, Iowa State University, 1976.

Almost 61 percent of those students living on a farm indicated they planned to enter an on-farm agricultural occupation. Over 30 percent of those students not living on a farm had selected an on-farm agricultural occupation. A chi-square value of 43.52 for this variable is significant at the .001 level of probability. Therefore, it may be concluded that a relationship does exist between student's place of residence and student's occupational plans.

Educational plans

Students were requested to indicate their educational plans upon graduation from high school. Item number nine of the questionnaire asked the students to complete the following statement:

Upon completion of high school, I plan to...

1. ( ) attend a postsecondary area vocational school or community college. Name of area school or community college planning to attend _____.
2. ( ) attend a four-year college or university. Name of college or university planning to attend _____.
3. ( ) get a full-time job or work for myself and not attend college.

A complete analysis of this variable as a dependent variable may be found in a separate, but closely related research report.[2] The data received from this variable were analyzed using the chi-square statistic to determine the relationship between student's place of residence and student's educational plans upon graduation from high school (Table 13).

[2]Byler, B.L. Analysis of Factors Related to the Educational Plans of Iowa Vocational Agriculture Students. Ames, Iowa: Department of Agricultural Education, Iowa State University, 1975.

Table 13. Chi-square test for the relationship between student's place of residence and student's educational plans

Place of residence	Student's educational plans: Attend area vocational school No.	%	Attend four-year college or university No.	%	Get a job and not attend college No.	%	Total No.	%
Students who lived on a farm.	130	27.0	87	18.1	264	54.9	481	81.4
Students who did not live on a farm.	28	25.5	17	15.5	65	59.1	110	18.6
Total	158		104		329		591	
	(26.7%)		(17.6%)		(55.7%)			
	Chi-square = .72 ns							

Over 26 percent of the students participating in this study indicated they planned to attend an area vocational school; 17.6 percent planned to attend a four-year college or university; and 55.7 percent planned to get a full-time job and not attend college upon graduation from high school. A chi-square value of .72 is not significant. Therefore, it may be concluded that no relationship existed between student's place of residence, and student's educational plans upon graduation from high school.

Number of years of posthigh school education planned

This item of the questionnaire asked that students indicate the number of years of formal education they planned to receive beyond high school. A three-way analysis of variance was used to analyze the data received from this variable (Table 14).

Table 14. Analysis of variance summary table for amount of further education beyond high school planned by students, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	298.95	7.37	2.70**
Student grade level	1	2.09	2.09	< 1.0
Student group	1	5.16	5.16	1.89
Student group X student grade level	1	4.17	4.17	1.53
Within	560	1527.01	2.73	

**Significant at the .01 level of probability.

The sources of variation analyzed were; schools, student grade level, and student group (on-farm or off-farm vocational agriculture students). No significant F ratio was observed for the mean responses of students grouped by their place of residence.

A summary of the mean responses and standard deviations for this variable by students grouped according to their place of residence is presented in Table 15. A mean response of 2.26 for the total group of students would indicate they planned to receive an average of less than two years of further education beyond high school.

Work experience while in high school

Students were requested to indicate their extent of working outside their family and home or farm. Table 16 summarizes the responses to this variable by students grouped as on-farm or off-farm students, according to their place of residence. Over 58 percent of the students who did not live

Table 15. Means and standard deviations regarding number of years of further education planned by students, for students grouped by place of residence

Group number	Student group	Number	Mean response	Standard deviation
1	Students who lived on a farm.	481	2.26	1.70
2	Students who did not live on a farm.	110	2.25	1.78
	Total	591	2.26	1.71

Table 16. Chi-square test for relationship between student's responses regarding extent of working while in high school and student's place of residence

Response alternatives	Frequency of responses by groups[a]					
	Group 1		Group 2		Totals	
	No.	%	No.	%	No.	%
1. I have a fairly regular job outside my family and home or farm.	108	22.5	64	58.2	172	29.2
2. I sometimes work outside my family and home or farm.	269	56.2	36	32.7	305	51.8
3. I do not work outside my family and home or farm.	102	22.3	10	9.1	112	19.0
Totals	479	100.0	110	100.0	589	100.0
	Chi-square = 55.99***					

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

***Significant at the .001 level of probability.

on a farm indicated that they had a fairly regular job outside the family and home or farm. Whereas, 22.5 percent of those students living on a farm indicated that they had a fairly regular job outside the family and home or farm. Only 19 percent of the students indicated they did not work outside the family and home or farm. The data received from this variable were analyzed using the chi-square statistic. A significant ($P < .001$) chi-square value of 55.99 would indicate that a relationship does exist between student's place of residence and the extent of student's working outside the family and home or farm.

"Significant others" influencing occupational choice

This item requested that students indicate the person who had the most influence on their choice of occupation. Table 17 summarizes the frequency of responses by the two student groups. About 47 percent of the students in both groups combined indicated their father had the most influence on their choice of occupation. Over 49 percent of the students living on a farm indicated that their father had the most influence on their occupational choice. Whereas, 35.9 percent of the students not living on a farm indicated their father had the most influence.

The chi-square statistic was used in analyzing the data received from this variable. A significant ($P < .05$) chi-square value of 17.21 was calculated. Therefore, it may be concluded that a relationship does exist between student's indication of the person having the most influence on their occupational choice, and student's place of residence.

Part II of Questionnaire

Part II of the questionnaire contained 30 items to be rated by each student participating in the study (see Appendix A). The students were

Table 17. Chi-square test for relationship between "significant others" influencing student's occupational choice and student's place of residence

"Significant others"	Frequency of responses by groups[a]					
	Group 1		Group 2		Total	
	No.	%	No.	%	No.	%
1. Father	223	49.8	37	35.9	260	47.2
2. Mother	11	2.5	5	4.8	16	2.9
3. Brother or sister	16	3.6	9	8.7	25	4.5
4. Another relative	18	4.0	8	7.8	26	4.7
5. Counselor	14	3.1	1	1.0	15	2.7
6. Close friend	27	6.0	11	10.7	38	6.9
7. Agriculture instructor	11	2.4	3	2.9	14	2.6
8. Another teacher	9	2.0	1	1.0	10	1.8
9. Other than above	119	26.6	28	27.2	147	26.7
Totals	448	100.0	103	100.0	551	100.0
	Chi-square = 17.21*					

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

*Significant at the .05 level of probability.

asked to rate each of the statements on a 10 point scale from low to high. They were instructed to read each statement and rate how they feel about that statement by circling one number from 0 to 10. A score of 0 is the lowest and a score of 10 is the highest. For interpretation of the data received from each statement the following may be used:

Rating scale

1 = low rating

3 = below average rating

5 = average rating

7 = above average rating

10 = highest rating

The mean ratings by the two student groups were calculated for each of the statements on the rating scale in Part II of the questionnaire. A three-way analysis of variance was utilized to determine if significant differences exist in the mean ratings of each statement between students who lived on a farm and students who did not live on a farm. The sources of variation that were analyzed for each statement are as follows: schools, student grade level (junior or senior) and student group (on-farm or off-farm students).

Amount of certainty regarding occupational choice

Statement number one of the rating scale asked that students respond to how certain they are that they will enter the occupation they have chosen. This was accomplished by circling a number on the rating scale from 0 to 10. A summary of the analysis of variance used to analyze the mean response ratings are presented in Table 18.

An F ratio of 5.34 was observed for differences in students' mean ratings of this statement grouped by place of residence. This F ratio with 1 and 560 degrees of freedom is significant at the .05 level of probability.

The mean ratings and standard deviations for the two student groups are presented in Table 19. It was determined that a mean rating of 7.04

Table 18. Analysis of variance summary table for amount of certainty regarding occupational choice, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	171.57	6.35	1.02
Student grade level	1	131.93	131.93	21.18**
Student group	1	33.25	33.25	5.34*
Student group X student grade level	1	2.73	2.73	< 1.0
Within	560	3486.85	6.23	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

Table 19. Means and standard deviations regarding amount of certainty for occupational choice, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	7.04[a]	2.48
2	Students who did not live on a farm.	110	6.23	2.65
	Total	591	6.89	2.53

[a]Mean rating for Group 1 is significantly ($P < .05$) greater than mean rating for Group 2.

for Group 1 is significantly ($P < .05$) greater than the mean rating of 6.23 for Group 2. Therefore, it may be concluded that students who lived on a

farm were more certain of their choice of occupation than students who did not live on a farm. A total group mean rating of 6.89 would suggest that students participating in this study were fairly certain they will enter the occupation they have selected.

Amount of thought given to occupational choice

This item of the rating scale asked that students indicate their perception of the amount of thought they had given regarding their occupational choice. Table 20 reveals a summary of the analysis of variance for the mean ratings of this statement. A significant ($P < .05$) F ratio of 3.98 was observed for differences in mean ratings of students grouped by place of residence.

Table 20. Analysis of variance summary table for amount of thought given to choice of occupation, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	93.86	3.48	< 1.0
Student grade level	1	98.40	98.40	20.08**
Student group	1	19.51	19.51	3.98*
Student group X student grade level	1	16.28	16.28	3.32
Within	560	2741.50	4.90	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

Table 21 reveals the mean ratings and standard deviations for the two student groups. A mean rating of 7.73 for Group 1 is significantly ($P < .05$)

Table 21. Means and standard deviations regarding amount of thought given to occupational choice, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	7.73[a]	2.13
2	Students who did not live on a farm.	110	6.99	2.64
	Total	591	7.59	2.25

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

greater than the mean rating of 6.99 for Group 2. From this it may be concluded that on-farm students had given a greater amount of thought to their choice of occupation than off-farm students. A mean rating of 7.59 for the total group would indicate that these students had given a considerable amount of thought to their choice of occupation.

Ability for occupation planning to enter

This statement of the rating scale requested that students indicate their perception of the ability they have for the occupation they are planning to enter upon completion of their formal education. A summary of the analysis of variance appears in Table 22. An F ratio of 23.75 was observed for differences in mean ratings between the two student groups. This F ratio with 1 and 560 degrees of freedom is significant at the .01 level of probability.

Table 23 reports the means and standard deviations for the student groups. It was determined that a mean rating of 8.01 for Group 1 is significantly ($P < .01$) greater than the mean rating of 6.80 for Group 2.

Table 22. Analysis of variance summary table for students' perception of ability to perform selected occupation, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	81.56	3.02	< 1.0
Student grade level	1	11.81	11.81	3.36
Student group	1	83.60	83.60	23.75**
Student group X student grade level	1	.21	.21	< 1.0
Within	560	1972.05	3.52	

**Significant at the .01 level of probability.

Table 23. Means and standard deviations regarding students' perception of ability to perform selected occupation, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	8.01[a]	1.76
2	Students who did not live on a farm.	110	6.80	2.33
	Total	591	7.79	1.93

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

Therefore, it may be concluded that students living on a farm indicated a greater ability for the occupation they are planning to enter than did students who did not live on a farm. A total group mean rating of 7.79

would suggest that students feel rather competent in ability for the occupation they are planning to enter.

Amount of work experience in occupation planning to enter

In responding to this statement, students were requested to indicate their perception of the amount of work experience they had received for the occupation they planned to enter upon completion of their formal education. Results of the analysis of variance used to analyze the mean ratings for this variable are presented in Table 24.

Table 24. Analysis of variance summary table for amount of work experience in occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	290.58	10.76	1.22
Student grade level	1	23.40	23.40	2.66
Student group	1	132.43	132.43	15.05**
Student group X student grade level	1	41.62	41.62	4.73*
Within	560	4922.99	8.80	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

A significant ($P < .01$) F ratio of 15.05 was observed for differences in the mean ratings of the two student groups.

The means and standard deviations for this variable appear in Table 25. A mean rating of 7.37 for Group 1 is significantly ($P < .01$) greater than the

Table 25. Means and standard deviations regarding amount of work experience in occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	7.37[a]	2.92
2	Students who did not live on a farm.	110	5.60	3.29
	Total	591	7.04	3.06

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

mean rating of 5.60 for Group 2. Consequently, it may be concluded that students living on a farm had received a greater amount of work experience for the occupation they are planning to enter than did students who were not living on a farm. A mean rating of 7.04 for the total group would indicate a considerable amount of work experience these students had received for the occupation they are planning to enter upon completion of their formal education.

Knowledge of occupation planning to enter

Students were requested to indicate their perception of the knowledge they have for the occupation they are planning to enter upon completion of their formal education. Table 26 summarizes the analysis of variance used in analyzing the data for this statement. A significant ($P < .01$) F ratio of 9.66 was observed for the mean ratings of students grouped by their place of residence.

Table 26. Analysis of variance summary table for students' perception of knowledge of occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	147.59	5.47	1.15
Student grade level	1	20.10	20.10	4.24*
Student group	1	45.76	46.76	9.66**
Student group X student grade level	1	5.44	5.44	1.15
Within	560	2252.63	4.74	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

The means and standard deviations for this variable appear in Table 27.

Table 27. Means and standard deviations regarding students' perception of knowledge of occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	7.37[a]	2.10
2	Students who did not live on a farm.	110	6.31	2.54
	Total	591	7.18	2.23

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

It was determined that a mean rating of 7.37 for Group 1 is significantly ($P < .01$) greater than the mean rating of 6.31 for Group 2. Therefore it may be concluded that on-farm students perceived their knowledge for the occupation they had chosen to be greater than off-farm students' perception of their knowledge of the occupation they had selected. A mean rating of 7.18 for the total group would indicate that students perceived themselves as having considerable knowledge of the occupation they are planning to enter.

Value of high school training for occupation planning to enter

In responding to this variable, students were asked to indicate their perception of the value of their high school training for the occupation they are planning to enter. The analysis of variance summary for this variable is revealed in Table 28.

Table 28. Analysis of variance summary table for students' perception of value of high school training for occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	493.02	18.26	2.71**
Student grade level	1	.40	.40	< 1.0
Student group	1	58.98	58.98	8.74**
Student group X student grade level	1	.13	.13	< 1.0
Within	550	3782.31	6.75	

**Significant at the .01 level of probability.

A significant ($P < .01$) F ratio of 8.74 was observed for the mean ratings of this variable for students grouped according to their place of residence (on-farm or off-farm).

Table 29 summarizes the means and standard deviations received from this variable.

Table 29. Means and standard deviations regarding students' perception of value of high school training for occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.71[a]	2.67
2	Students who did not live on a farm.	110	4.82	2.80
	Total	591	5.55	2.72

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

It was determined that a mean rating of 5.71 for Group 1 is significantly ($P < .01$) greater than the mean rating of 4.82 for Group 2. Consequently, it may be concluded that on-farm students indicated a higher rating in regard to their perception of the value of their high school training for the occupation they are planning to enter than did off-farm students. A total group mean rating of 5.55 would indicate slightly above average rating for the value of their high school training for the occupation they are planning to enter. This conclusion would be based on 5.0 as midpoint or average on the rating scale.

Amount of training high school had provided for occupation planning to enter

Students were requested to indicate their perception of the amount of training their high school has provided for the occupation they are planning to enter. The analysis of variance calculation for this variable revealed a significant ($P < .01$) F ratio of 11.95 (Table 30).

Table 30. Analysis of variance summary table for students' perception of amount of training high school has provided for occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	527.67	19.54	2.82**
Student grade level	1	1.25	1.25	< 1.0
Student group	1	82.91	82.91	11.95**
Student group X student grade level	1	3.31	3.31	< 1.0
Within	560	3885.93	6.94	

**Significant at the .01 level of probability.

The means and standard deviations for each student group are presented in Table 31. It was revealed that a mean rating of 5.15 for Group 1 is significantly ($P < .01$) greater than the mean rating of 4.12 for Group 2. Therefore, it may be concluded that students living on a farm believed their high school was providing a greater amount of training for the occupation they are planning to enter than did students who were not living on a farm. A mean rating of 4.96 for the total group would indicate that students perceived their high school to be providing slightly less than

Table 31. Means and standard deviations regarding students' perception of amount of training high school had provided for occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.15[a]	2.73
2	Students who did not live on a farm.	110	4.12	2.79
	Total	591	4.96	2.77

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

average amount of training for the occupation they are planning to enter.

Amount of encouragement to continue education beyond high school student had received from father

This item of the rating scale requested that students indicate the amount of encouragement they had received from their father to continue their formal education beyond high school. A summary of the analysis of variance for the mean ratings of the two student groups is presented in Table 32. No significant F ratio was observed for differences in mean ratings of students grouped by their place of residence.

Table 33 summarizes the group means and standard deviations for this variable.

Amount of encouragement to continue education beyond high school student had received from mother

Students were requested to indicate the amount of encouragement they had received from their mother to continue their formal education beyond

Table 32. Analysis of variance summary table for amount of encouragement student had received from father to continue education beyond high school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	615.78	22.81	1.90*
Student grade level	1	.23	.23	< 1.0
Student group	1	16.15	16.15	1.34
Student group X student grade level	1	9.40	9.40	< 1.0
Within	560	6732.12	12.02	

*Significant at the .05 level of probability.

Table 33. Means and standard deviations regarding amount of encouragement received from father to continue education beyond high school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.73	3.47
2	Students who did not live on a farm.	110	4.47	3.81
	Total	591	4.68	3.53

high school. Table 34 summarizes the three-way analysis of variance used to analyze the data received from this variable. No significant F ratio was observed for the differences in mean ratings for student group.

The means and standard deviations for this variable are presented in Table 35. A comparison of the two group means revealed no significant

Table 34. Analysis of variance summary table for amount of encouragement student had received from mother to continue education beyond high school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	412.13	15.26	1.28
Student grade level	1	.67	.67	< 1.0
Student group	1	41.18	41.18	3.48
Student group X student grade level	1	14.82	14.82	1.24
Within	560	6689.34	11.95	

Table 35. Means and standard deviations regarding amount of encouragement received from mother to continue education beyond high school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.43	3.42
2	Students who did not live on a farm.	110	5.05	3.74
	Total	591	5.36	3.48

differences between on-farm and off-farm students for the amount of influence they had received from their mother to continue their education beyond high school.

Amount of encouragement received from father to attend a postsecondary area vocational school

For this variable, students were requested to report their perception of the amount of encouragement they had received from their father to attend a postsecondary area vocational school upon graduation from high school. Table 36 summarizes the three-way analysis of variance used to

Table 36. Analysis of variance summary table for amount of encouragement student had received from father to attend an area vocational school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	244.60	9.05	< 1.0
Student grade level	1	7.52	7.52	< 1.0
Student group	1	16.95	16.95	1.52
Student group X student grade level	1	.48	.48	< 1.0
Within	560	6255.27	11.17	

analyze the data received from this variable. No significant F ratio was observed for differences in ratings of this variable.

Table 37 reveals the means and standard deviations for this variable. A mean rating of 3.41 for the total group would suggest that students had received a low amount of encouragement from their father to attend an area vocational school upon graduation from high school.

Amount of encouragement received from father to attend a four-year college or university

This item of the rating scale requested that students indicate their

Table 37. Means and standard deviations regarding amount of encouragement received from father to attend an area vocational school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	3.50	3.31
2	Students who did not live on a farm.	110	3.05	3.41
	Total	591	3.41	3.33

perception of the amount of encouragement they had received from their father to attend a four-year college or university upon graduation from high school. The three-way analysis of variance used to analyze the data for this variable is presented in Table 38. No significant F ratio was

Table 38. Analysis of variance summary table for amount of encouragement student had received from father to attend a four-year college or university, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	537.85	19.92	2.11**
Student grade level	1	24.70	24.70	2.62
Student group	1	17.51	17.51	1.86
Student group X student grade level	1	28.99	28.99	3.07
Within	560	5283.39	9.44	

**Significant at the .01 level of probability.

observed for differences in mean ratings between on-farm and off-farm students.

The mean ratings and standard deviations for this variable are presented in Table 39. A total group mean rating of 2.49 would suggest that students had received a relatively low amount of encouragement from their father to attend a four-year college or university upon graduation from high school.

Table 39. Means and standard deviations regarding amount of encouragement student had received from father to attend a four-year college or university, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	2.53	3.17
2	Students who did not live on a farm.	110	2.31	3.09
	Total	591	2.49	3.15

Amount of encouragement received from mother to attend a postsecondary area vocational school

Students were asked to indicate their perception of the amount of encouragement they had received from their mother to attend a postsecondary area vocational school upon graduation from high school. Table 40 summarizes the analysis of variance calculation for this item of the rating scale. No significant F ratio was observed for the differences in mean ratings between student groups.

Table 41 summarizes the mean ratings and standard deviations for the data received from this variable. It may be concluded from the analysis of

Table 40. Analysis of variance summary table for amount of encouragement student had received from mother to attend an area vocational school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	271.29	10.02	< 1.0
Student grade level	1	36.38	36.38	3.61
Student group	1	4.66	4.66	< 1.0
Student group X student grade level	1	.94	.94	< 1.0
Within	560	5640.38	10.07	

Table 41. Means and standard deviations regarding amount of encouragement student had received from mother to attend an area vocational school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	3.18	3.13
2	Students who did not live on a farm.	110	3.01	3.42
	Total	591	3.15	3.18

this variable that students had received a relatively low amount of encouragement from their mother to attend an area vocational school upon graduation from high school.

Amount of encouragement received from mother to attend a four-year college or university

This item of the rating scale asked that students indicate their

perception of the amount of encouragement they had received from their mother to attend a four-year college or university upon graduation from high school. The three-way analysis of variance for this variable revealed that an F ratio of 4.19 for differences between the mean ratings of on-farm and off-farm students is significant at the .05 level of probability (Table 42).

Table 42. Analysis of variance summary table for amount of encouragement student had received from mother to attend a four-year college or university, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	480.37	17.79	1.61*
Student grade level	1	19.96	19.96	1.81
Student group	1	46.28	46.28	4.19*
Student group X student grade level	1	38.02	38.02	3.44
Within	560	6187.07	11.05	

*Significant at the .05 level of probability.

The means and standard deviations for this variable are presented in Table 43. It was determined that a mean rating of 3.06 for Group 1 is significantly ($P < .05$) greater than the mean rating of 2.62 for Group 2. Consequently, it may be concluded that students who lived on a farm had received a greater amount of encouragement from their mother to attend a four-year college or university than students who did not live on a farm. A total group mean of 2.98 would suggest that students had received a rather

Table 43. Means and standard deviations regarding amount of encouragement student had received from mother to attend a four-year college or university, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	3.06[a]	3.44
2	Students who did not live on a farm.	110	2.62	3.07
	Total	591	2.98	3.38

[a]Mean rating for Group 1 is significantly ($P < .05$) greater than mean rating for Group 2.

low amount of encouragement from their mother to attend a four-year college or university.

Amount of encouragement received from vocational agriculture instructor to attend a postsecondary area vocational school

Students were asked to indicate their perception regarding the amount of encouragement they had received from their vocational agriculture instructor to attend a postsecondary area vocational school upon graduation from high school. Table 44 summarizes the analysis of variance used in analyzing the data received from this variable. No significant difference was observed in mean ratings between on-farm and off-farm students.

The means and standard deviations for each of the two student groups are presented in Table 45. A total group mean rating of 3.06 would suggest that students had received a relatively low amount of encouragement from their vocational agriculture instructor to attend an area vocational school upon graduation from high school.

Table 44. Analysis of variance summary table for amount of encouragement student had received from vo-ag instructor to attend an area vocational school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	551.85	20.44	2.84**
Student grade level	1	30.42	30.42	7.00**
Student group	1	27.14	27.14	3.77
Student group X student grade level	1	.06	.06	< 1.0
Within	560	4038.82	7.21	

**Significant at the .01 level of probability.

Table 45. Means and standard deviations regarding amount of encouragement student had received from vo-ag instructor to attend an area vocational school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	3.15	2.89
2	Students who did not live on a farm.	110	2.64	2.49
	Total	591	3.06	2.83

Amount of encouragement received from vocational agriculture instructor to attend a four-year college or university

Students were requested to indicate their perception of the amount of encouragement they had received from their vocational agriculture

instructor to attend a four-year college or university. The analysis of variance summary of this variable is revealed in Table 46. It was determined that a significant ($P < .05$) F ratio of 4.22 existed for differences in mean ratings between the two student groups.

Table 46. Analysis of variance summary table for amount of encouragement student had received from vo-ag instructor to attend a four-year college or university, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	439.4	16.27	1.95*
Student grade level	1	8.92	8.92	1.07
Student group	1	35.19	35.19	4.22*
Student group X student grade level	1	9.59	9.59	1.13
Within	560	4674.95	8.35	

*Significant at the .05 level of probability.

Table 47 summarizes the mean ratings and standard deviations for students grouped by their place of residence. A mean rating of 2.74 for Group 1 is significantly ($P < .05$) greater than the mean rating of 2.18 for Group 2. Therefore it may be concluded that on-farm students had received a greater amount of encouragement from their vo-ag instructor to attend a four-year college or university than did off-farm students.

Value of high school vocational agriculture courses completed in preparing for occupation planning to enter

This statement of the rating scale asked that students indicate their

Table 47. Means and standard deviations regarding amount of encouragement student had received from vo-ag instructor to attend a four-year college or university, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	2.74[a]	3.03
2	Students who did not live on a farm.	110	2.18	2.66
	Total	591	2.64	2.97

[a]Mean rating for Group 1 is significantly ($P < .05$) greater than mean rating for Group 2.

perception of the value of their high school vocational agriculture courses completed in preparing them for the occupation they are planning to enter. Table 48 summarizes the analysis of variance used to analyze the data for this variable. An F ratio of 8.19 was observed for differences in mean ratings between on-farm and off-farm students. This F ratio with 1 and 560 degrees of freedom is significant at the .01 level of probability.

The mean ratings and standard deviations for this variable are presented in Table 49. It was determined that a mean rating of 5.60 for Group 1 is significantly ($P < .01$) greater than the mean rating of 4.60 for Group 2. It may therefore be concluded that students living on a farm perceived their vo-ag courses completed to be of greater value in preparing for the occupation they are planning to enter than did students who were not living on a farm. A total group mean rating of 5.41 would indicate that students' perception of the value of their vocational agriculture courses completed for the occupation they are planning to enter was just above th

Table 48. Analysis of variance summary table for students' perception of value of high school vo-ag courses completed in preparing for occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	434.2	16.08	2.34**
Student grade level	1	.03	.03	< 1.0
Student group	1	56.21	56.21	8.19**
Student group X student grade level	1	.53	.53	< 1.0
Within	560	3843.08	6.86	

**Significant at the .01 level of probability.

Table 49. Means and standard deviations regarding students' perception of value of high school vo-ag courses completed in preparing for occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.60[a]	2.71
2	Students who did not live on a farm.	110	4.60	2.63
	Total	591	5.41	2.72

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

midpoint of the scale which could be interpreted as just above an average rating.

Value of FFA program in preparing for occupation planning to enter

Students were asked to indicate their perception of the value of their FFA program in preparing them for the occupation they are planning to enter. The three-way analysis of variance used to analyze the data for this variable appears in Table 50. A significant ($P < .01$) F ratio of 13.07 was observed for variation between the mean responses of the two student groups.

Table 50. Analysis of variance summary table for students' perception of value of FFA program in preparing for occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	648.21	24.01	3.00**
Student grade level	1	.01	.01	< 1.0
Student group	1	104.67	104.68	13.07**
Student group X student grade level	1	1.33	1.33	< 1.0
Within	560	4488.09	8.01	

**Significant at the .01 level of probability.

Table 51 reveals the means and standard deviations of this variable for students grouped by their place of residence. It was determined that a mean rating of 5.23 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.74 for Group 2. Therefore, it may be concluded that students living on a farm perceived a greater value of their FFA program in

Table 51. Means and standard deviations regarding students' perception of value of FFA program in preparing for occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.23[a]	2.98
2	Students who did not live on a farm.	110	3.74	2.87
	Total	591	4.95	3.01

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

preparing for the occupation they are planning to enter than did students who were not living on a farm.

Value of vocational agriculture courses completed in preparing to attend a postsecondary area vocational school

This item of the rating scale requested that students indicate their perception of the value of their vocational agriculture courses completed in preparing them to attend a postsecondary area vocational school upon graduation from high school. A summary of the analysis of variance for this variable appears in Table 52. A significant ($P < .01$) F ratio of 12.74 was observed for differences in mean ratings between the two student groups.

The means and standard deviations for this variable are presented in Table 53. A mean rating of 4.77 for Group 1 was found to be significantly ($P < .01$) greater than the mean rating of 3.60 for Group 2. Consequently, on-farm students perceived the value of their vo-ag courses completed in preparation to attend an area vocational school to be greater than did off-farm students.

Table 52. Analysis of variance summary table for students' perception of value of vo-ag courses completed in preparing to attend an area vocational school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	461.58	17.10	2.36**
Student grade level	1	.49	.49	< 1.0
Student group	1	92.38	92.38	12.74**
Student group X student grade level	1	1.27	1.27	< 1.0
Within	560	4060.17	7.25	

**Significant at the .01 level of probability.

Table 53. Means and standard deviations regarding students' perception of value of vo-ag courses completed in preparing to attend an area vocational school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.77[a]	2.73
2	Students who did not live on a farm.	110	3.60	2.95
	Total	591	4.55	2.81

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

Value of vocational agriculture courses completed in preparing to attend a four-year college or university

Students participating in this study were asked to indicate their

perception of the value of their vocational agriculture courses completed in preparing them to attend a four-year college or university upon graduation from high school. The analysis of variance summary for this variable is presented in Table 54. An F ratio of 8.78 was observed for

Table 54. Analysis of variance summary table for students' perception of value of vo-ag courses completed in preparing to attend a four-year college or university, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	365.43	13.53	1.88*
Student grade level	1	.99	.99	< 1.0
Student group	1	63.32	63.32	8.78**
Student group X student grade level	1	.13	.13	< 1.0
Within	560	4037.48	7.21	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

differences in mean ratings of this statement by students grouped according to their place of residence. This F ratio with 1 and 560 degrees of freedom is significant at the .01 level of probability.

Table 55 reveals the means and standard deviations for this variable. It was revealed that a mean rating of 3.90 for Group 1 is significantly ($P < .01$) greater than the mean rating of 2.88 for Group 2. It may therefore be concluded that on-farm students perceived their vocational agriculture courses completed in preparing them to attend a four-year college or university to be of greater value than did off-farm students.

Table 55. Means and standard deviations regarding students' perception of value of vo-ag courses completed in preparing to attend a four-year college or university, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	3.90[a]	2.72
2	Students who did not live on a farm.	110	2.88	2.78
	Total	591	3.71	2.76

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

Value of high school courses completed in preparing to attend a postsecondary area vocational school

This statement of the rating scale asked that students indicate their perception of the value of their high school courses completed in preparing them to attend an area vocational school upon graduation from high school. A summary of the analysis of variance used to analyze the mean ratings received from this statement appears in Table 56. It was determined that a significant ($P < .01$) F ratio of 8.03 exists for ratings of this statement by students grouped according to their place of residence.

The means and standard deviations for this variable are presented in Table 57. A mean rating of 4.79 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.91 for Group 2. From this it may be concluded that on-farm students perceived a higher value of their high school courses in preparing to attend an area vocational school than did off-farm students. A total group mean of 4.63 would suggest a below average

Table 56. Analysis of variance summary table for students' perception of value of high school courses completed in preparing to attend an area vocational school, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	264.94	9.81	1.34
Student grade level	1	1.06	1.06	< 1.0
Student group	1	59.00	59.00	8.03**
Student group X student grade level	1	.85	.85	< 1.0
Within	560	4118.51	7.35	

**Significant at the .01 level of probability.

Table 57. Means and standard deviations regarding students' perception of value of high school courses completed in preparing to attend an area vocational school, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.79[a]	2.70
2	Students who did not live on a farm.	110	3.91	2.84
	Total	591	4.63	2.75

[a]Mean rating for Group 1 is significantly (P< .01) greater than mean rating for Group 2.

rating for this variable.

Value of high school courses completed in preparing to attend a four-year college or university

Students were requested to indicate their perception of the value of their high school courses completed in preparing them to attend a four-year college or university upon graduation from high school. Table 58 reveals the analysis of variance summary for this variable. A significant ($P < .05$)

Table 58. Analysis of variance summary table for students' perception of value of high school courses completed in preparing to attend a four-year college or university, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	301.02	11.15	1.30
Student grade level	1	10.13	10.13	1.18
Student group	1	35.52	35.52	4.15*
Student group X student grade level	1	1.46	1.46	< 1.0
Within	560	4800.74	8.57	

*Significant at the .05 level of probability.

F ratio of 4.15 was calculated for differences in mean ratings between the two student groups.

Table 59 reports the means and standard deviations for this variable. It was found that a mean rating of 4.51 for Group 1 is significantly ($P < .05$) greater than the mean rating of 3.75 for Group 2. Therefore, it may be concluded that on-farm students perceived the value of their high school courses completed in preparing them for attending a four-year college or

Table 59. Means and standard deviations regarding students' perception of value of high school courses completed in preparing to attend a four-year college or university, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.51[a]	2.95
2	Students who did not live on a farm.	110	3.75	2.94
	Total	591	4.37	2.96

[a]Mean rating for Group 1 is significantly ($P < .05$) greater than mean rating for Group 2.

university to be greater than the value perceived by off-farm students. It may also be concluded that a total group mean rating of 4.37 would indicate a below average rating for this variable.

Value of supervised occupational experience program in preparing for occupation planning to enter

Students were asked to indicate their perception of the value of their supervised occupational experience program in preparing them for the occupation they plan to enter upon completion of their formal education. The three-way analysis of variance used in analyzing the data for this variable appears in Table 60. A significant ($P < .01$) F ratio of 41.63 was observed for differences in mean ratings between the two student groups.

The means and standard deviations for this variable are presented in Table 61. A mean rating of 5.45 for Group 1 is significantly ($P < .01$) greater than the mean rating of 4.58 for Group 2. Consequently, it may be concluded that on-farm students perceived the value of their supervised

Table 60. Analysis of variance summary table for students' perception of value of supervised occupational experience program in preparing for occupation planning to enter, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	622.14	23.04	2.62**
Student grade level	1	1.38	1.38	< 1.0
Student group	1	365.91	365.91	41.63**
Student group X student grade level	1	2.03	2.03	<1.0
Within	560	4924.54	8.79	

**Significant at the .01 level of probability.

Table 61. Means and standard deviations regarding students' perception of value of supervised occupational experience program in preparing for occupation planning to enter, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.45[a]	3.06
2	Students who did not live on a farm.	110	4.58	3.13
	Total	591	5.29	3.09

[a]Mean rating for Group 1 is significantly (P< .01) greater than mean rating for Group 2.

occupational experience program for the occupation they are planning to enter, to be greater than the value perceived by off-farm students.

Chances of success as a student attending a four-year college or university and studying animal science

Students participating in this study were requested to indicate their perception of chances for success as a student if they were to attend a four-year college or university and study animal science. A summary of the analysis of variance for this variable is presented in Table 62. A significant ($P < .01$) F ratio of 7.39 was calculated for the variation of mean ratings between the two student groups.

Table 62. Analysis of variance summary table for students' perception of chance of success as a student if attended a four-year college or university in animal science, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	247.07	9.15	1.07
Student grade level	1	2.35	2.35	< 1.0
Student group	1	63.14	63.14	7.39**
Student group X student grade level	1	10.21	10.21	1.20
Within	560	4784.66	8.54	

**Significant at the .01 level of probability.

The means and standard deviations for the two student groups are presented in Table 63. A mean rating of 4.48 for Group 1 is significantly ($P < .01$) greater than a mean rating of 3.64 for Group 2. It may be concluded that on-farm students perceived their chances of success as a student attending a four-year college or university and studying animal science to

Table 63. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in animal science, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.48[a]	2.89
2	Students who did not live on a farm.	110	3.64	3.06
	Total	591	4.32	2.94

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

be greater than the chances of success perceived by off-farm students.

Chances of success as a student attending a four-year college or university and studying plant and soil science

This item of the rating scale asked that students indicate their perception of chances for success as a student if they were to attend a four-year college or university and study plant and soil science. Table 64 summarizes the analysis of variance used to analyze the data received from this variable. A significant ($P < .01$) F ratio of 11.17 was observed for differences in mean ratings between the two student groups.

Table 65 summarizes the means and standard deviations for this variable. It was determined that a mean rating of 3.96 for Group 1 is significantly ($P < .01$) greater than a mean rating of 2.99 for Group 2. From the analysis of this variable it may be concluded that on-farm students perceived their chances for success as a student attending a four-year college or university in plant and soil science to be greater than chances of success

Table 64. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university in plant and soil science, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	296.87	11.00	1.51
Student grade level	1	.92	.92	< 1.0
Student group	1	81.39	81.39	11.17**
Student group X student grade level	1	.51	.51	< 1.0
Within	560	4084.89	7.29	

**Significant at the .01 level of probability.

Table 65. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in plant and soil science, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	3.96[a]	2.73
2	Students who did not live on a farm.	110	2.99	2.71
	Total	591	3.78	2.75

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

perceived by off-farm students. A total group mean rating of 3.78 would indicate a below average rating for this variable.

Chances of success as a student attending a four-year college or university and studying agricultural mechanics

Students were requested to indicate their perception of chances for success as a student attending a four-year college or university and studying agricultural mechanics, upon graduation from high school. The analysis of variance calculation for this variable appears in Table 66.

Table 66. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university in agricultural mechanics, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	259.96	9.63	1.21
Student grade level	1	40.21	40.21	5.03*
Student group	1	40.00	40.00	5.01*
Student group X student grade level	1	5.48	5.48	< 1.0
Within	560	4472.15	7.99	

*Significant at the .05 level of probability.

The analysis of variance revealed a significant ($P < .05$) F ratio of 5.01 for differences in the group mean ratings.

The means and standard deviations for this variable are summarized in Table 67. A mean rating of 5.45 for Group 1 is significantly ($P < .05$) greater than a mean rating of 4.60 for Group 2. From this it may be concluded that on-farm students perceived their chances of success for studying agricultural mechanics at a four-year college or university to be greater that did off-farm students.

Table 67. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in agricultural mechanics, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.45[a]	2.80
2	Students who did not live on a farm.	110	4.60	3.04
	Total	591	5.29	2.86

[a]Mean rating for Group 1 is significantly ($P < .05$) greater than mean rating for Group 2.

Chances of success as a student attending a four-year college or university and studying agricultural management

This item of the rating scale requested that students indicate their perception of chances for success as a student attending a four-year college or university in agricultural management. The three-way analysis of variance calculation for this variable is presented in Table 68. From this analysis it was determined that an F ratio of 12.26 existed for differences in mean ratings between the two student groups. This F ratio with 1 and 560 degrees of freedom is significant at the .01 level of probability.

Table 69 reveals the means and standard deviations for the two student groups. A mean rating of 5.14 for Group 1 is significantly ($P < .01$) greater than the mean rating of 4.02 for Group 2. It may be concluded that students living on a farm perceived their chances for success as a student in agricultural management at a four-year college or university to be

Table 68. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university in agricultural management, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	342.18	12.67	1.79
Student grade level	1	18.42	18.42	2.61
Student group	1	86.65	86.65	12.26**
Student group X student grade level	1	3.54	3.54	< 1.0
Within	560	3956.89	7.07	

**Significant at the .01 level of probability.

Table 69. Means and standard deviations regarding students' perception of chances of success if attended a four-year college or university in agricultural management, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.14[a]	2.71
2	Students who did not live on a farm.	110	4.02	2.72
	Total	591	4.93	2.74

[a]Mean rating for Group 1 is significantly (P< .01) greater than mean rating for Group 2.

greater than did students who were not living on a farm.

Chances of success as a student attending an area vocational school and studying animal science

Students were asked to indicate their chances of success as a student if they were to attend a postsecondary area vocational school and study animal science. A significant ($P < .01$) F ratio of 10.26 was calculated for differences in mean ratings of the two student groups (Table 70).

Table 70. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in animal science, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	349.31	12.94	1.54
Student grade level	1	11.70	11.70	1.40
Student group	1	86.01	86.01	10.26**
Student group X student grade level	1	.62	.62	< 1.0
Within	560	4694.55	8.38	

*Significant at the .01 level of probability.

The means and standard deviations for this variable appear in Table 71. It was revealed that a mean rating of 4.89 for Group 1 is significantly ($P < .01$) greater than a mean rating of 3.95 for Group 2. Therefore, it may be concluded that on-farm students perceived their chances for success in animal science at an area vocational school to be greater than did off-farm students.

Table 71. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in animal science, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.89[a]	2.88
2	Students who did not live on a farm.	110	3.95	3.14
	Total	591	4.72	2.95

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for group 2.

Chances of success as a student attending an area vocational school and studying plant and soil science

This item of the rating scale requested students to indicate their perception of chances for success as a student if they were to attend an area vocational school in plant and soil science. The three-way analysis of variance used to analyze the ratings received from this statement are summarized in Table 72. A significant ($P < .01$) F ratio of 12.61 was

Table 72. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in plant and soil science, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	397.55	14.72	1.99**
Student grade level	1	18.40	18.40	2.48
Student group	1	93.40	93.40	12.61**
Student group X student grade level	1	1.44	1.44	< 1.0
Within	560	4146.75	7.41	

**Significant at the .01 level of probability.

observed for the differences in mean ratings for students grouped by their place of residence.

Table 73 reveals the means and standard deviations for this variable. A mean rating of 4.49 for Group 1 was found to be significantly ($P < .01$) greater than a mean rating of 3.46 for Group 2. From this data it may be concluded that on-farm students perceived their chances of success as a

Table 73. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in plant and soil science, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	4.49[a]	2.76
2	Students who did not live on a farm.	110	3.46	2.90
	Total	591	4.29	2.81

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 2.

student in plant and soil science at an area vocational school to be greater than chances of success perceived by off-farm students.

Chances of success as a student attending an area vocational school and studying agricultural mechanics

This statement of the rating scale asked that students indicate their chances of success as a student if they were to attend an area vocational school and study agricultural mechanics. Table 74 summarizes the three-way analysis of variance used in analyzing the data from this variable.

The means and standard deviations for this variable appear in Table 75. A comparison of the group means revealed that a mean rating of 6.19 for Group 1 is significantly ($P < .01$) greater than a mean rating of 5.09 for Group 2. Consequently, it may be concluded that on-farm vocational agriculture students perceived their chances for success as a student in agricultural mechanics at an area vocational school to be greater than did off-farm vocational agriculture students.

Table 74. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in agricultural mechanics, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	199.25	7.38	< 1.0
Student grade level	1	65.40	65.40	8.57**
Student group	1	75.57	75.57	9.90**
Student group X student grade level	1	15.79	15.79	2.07
Within	560	4275.11	7.63	

**Significant at the .01 level of probability.

Table 75. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in agricultural mechanics, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who live on a farm.	481	6.19[a]	2.71
2	Students who did not live on a farm.	110	5.09	3.06
	Total	591	5.98	2.80

[a]Mean rating for Group 1 is significantly (P< .01) greater than mean rating for Group 2.

Chances of success as a student attending an area vocational school and studying agricultural management

Students were requested to indicate how they would rate their chances of success at an area vocational school if they were to study agricultural management. Table 76 summarizes the three-way analysis of variance used in analyzing the data for this variable. A significant ($P < .01$) F ratio of

Table 76. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school in agricultural management, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	353.54	13.09	1.79*
Student grade level	1	46.13	46.13	6.30*
Student group	1	154.68	154.68	21.13**
Student group X student grade level	1	2.74	2.74	< 1.0
Within	560	4099.65	7.32	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

21.13 was calculated for differences in mean ratings of the two student groups.

Table 77 reveals the means and standard deviations for this variable. A mean rating of 5.74 for Group 1 is significantly ($P < .01$) greater than a mean rating of 4.30 for Group 2. It may be concluded that on-farm students perceived their chances for success in agricultural management at

Table 77. Means and standard deviations regarding students' perception of chances of success if attended an area vocational school in agricultural management, for students grouped by their place of residence

Group number	Student group	Number	Mean rating	Standard deviation
1	Students who lived on a farm.	481	5.74[a]	2.76
2	Students who did not live on a farm.	110	4.30	2.82
	Total	591	5.48	2.82

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for group 3.

an area vocational school to be greater than did off-farm students.

Students' Level of Achievement in Agriculture

Animal Science Achievement Test Scores

Research hypothesis 2 stated that there will be significant differences in Animal Science Achievement Test scores between on-farm and off-farm vocational agriculture students.

The data used in testing this hypothesis were collected by administering the Agribusiness Achievement Test developed by Peterson, et al. The raw scores from this test were transformed to standard scores for analysis.

A three-way analysis of variance was used to analyze the data received from the Animal Science Achievement Test. A summary of the analysis of variance for this variable appears in Table 78. The sources of variation analyzed are as follows: schools, student grade level (junior or senior), and student group (grouped by place of residence). An F ratio of 14.46

Table 78. Analysis of variance summary table for animal science achievement test scores, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	8024.95	297.22	4.40**
Student grade level	1	387.87	387.87	5.75*
Student group	1	975.87	975.87	14.46**
Student group X student grade level	1	55.8	55.8	< 1.0
Within	560	37793.29	67.49	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

was observed for differences in mean Animal Science Achievement Test scores between on-farm and off-farm vocational agriculture students. This F ratio with 1 and 560 degrees of freedom is significant at the .01 level of probability.

The means and standard deviations for these test scores are presented in Table 79. A comparison of the two group means revealed that a mean score of 57.64 for Group 1 is significantly ($P < .01$) greater than a mean score of 54.26 for Group 2. From the analysis of the Animal Science Achievement Test scores, it may be concluded that students living on a farm possessed a higher level of achievement in animal science than students who did not live on a farm.

Plant and Soil Science Achievement Test Scores

Research hypothesis 3 stated that there will be significant differences in Plant and Soil Science Achievement Test scores between on-farm and off-farm

Table 79. Mean animal science achievement test scores for students grouped by their place of residence

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who lived on a farm.	481	57.64	8.76
2	Students who did not live on a farm.	110	54.26	9.40
	Total	591	57.02	8.97

[a]Mean score for Group 1 is significantly ($P < .01$) greater than mean score for Group 2.

vocational agriculture students. The data used in testing this hypothesis were collected by use of the Peterson Agribusiness Achievement Test.

Table 80 summarizes the three-way analysis of variance used in analyzing the data received for this variable. It was determined that a significant ($P < .01$) F ratio of 8.75 existed for the variation in mean scores between on-farm and off-farm vocational agriculture students.

Table 81 reveals the means and standard deviations for Plant and Soil Science Achievement Test scores of students grouped by their place of residence. A mean test score of 55.74 for Group 1 is significantly ($P < .01$) greater than a mean test score of 53.76 for Group 2. Consequently, it may be concluded that on-farm students possessed a higher level of achievement in plant and soil science than off-farm students.

Agricultural Mechanics Achievement Test Scores

Research hypothesis 4 stated that there will be significant differences in Agricultural Mechanics Achievement Test scores between on-farm and off-farm

Table 80. Analysis of variance summary table for plant and soil science achievement test scores, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	17124.12	634.23	9.40**
Student grade level	1	114.79	114.79	1.70
Student group	1	590.38	590.38	8.75**
Student group X student grade level	1	14.23	14.23	< 1.0
Within	560	37801.22	67.50	

**Significant at the .01 level of probability.

Table 81. Mean plant and soil science achievement test scores for students grouped by their place of residence

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who lived on a farm.	481	55.74	9.81
2	Students who did not live on a farm.	110	53.76	9.07
	Total	591	55.37	9.70

[a]Mean score for Group 1 is significantly ($P < .01$) greater than mean score for Group 2.

vocational agriculture students. The data utilized in testing this hypothesis were collected by using the Peterson Agribusiness Achievement Test.

The analysis of variance summary for this variable appears in Table 82.

Table 82. Analysis of variance summary table for agricultural mechanics achievement test scores, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	12383.15	458.64	7.62**
Student grade level	1	251.86	251.86	4.18*
Student group	1	948.90	948.90	15.76**
Student group X student grade level	1	12.22	12.22	< 1.0
Within	560	33718.66	60.21	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

It was determined that a significant ($P < .01$) F ratio of 15.76 existed for differences in mean test scores between the two student groups.

Table 83 presents the means and standard deviations of this variable for the two student groups. A mean test score of 59.66 for Group 1 is significantly ($P < .01$) greater than a mean test score of 57.60 for Group 2. It may therefore be concluded that students living on a farm possessed a higher level of achievement in agricultural mechanics that students who did not live on a farm.

Agricultural Management Achievement Test scores

Research hypothesis 5 stated that there will be significant differences in Agricultural Management Achievement Test scores between on-farm and off-farm vocational agriculture students. The Peterson Agribusiness Achievement

Table 83. Mean agricultural mechanics achievement test scores for students grouped by their place of residence

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who lived on a farm.	481	59.66	8.66
2	Students who did not live on a farm.	110	57.60	9.88
	Total	591	59.27	8.93

[a]Mean score for Group 1 is significantly ($P < .01$) greater than mean score for Group 2.

Test was utilized in testing this hypothesis.

A summary of the three-way analysis of variance used in analysing the data for this variable is presented in Table 84. It was found that a

Table 84. Analysis of variance summary table for agricultural management achievement test scores, between on-farm and off-farm vocational agriculture students

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	20638.54	764.39	9.93**
Student grade level	1	71.84	71.84	< 1.0
Student group	1	765.03	765.03	9.93**
Student group X student grade level	1	4.8	4.8	< 1.0
Within	560	43125.76	77.01	

**Significant at the .01 level of probability.

significant ($P < .01$) F ratio of 9.93 existed for differences in mean test scores between on-farm and off-farm students.

The means and standard deviations for this variable are revealed in Table 85. A mean test score of 58.64 for Group 1 is significantly ($P < .01$) greater than a mean test score of 56.26 for Group 2. Therefore, it may be concluded that students who were living on a farm possessed a higher level of achievement in agricultural management than students who were not living on a farm.

Table 85. Mean agricultural management achievement test scores for students grouped by their place of residence

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who lived on a farm.	481	58.64	10.41
2	Students who did not live on a farm.	110	56.26	10.51
	Total	591	58.20	10.46

[a]Mean score for Group 1 is significantly ($P < .01$) greater than mean score for Group 2.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine if there are differences in selected factors related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students.

The population for the study consisted of all junior and senior students enrolled in secondary vocational agriculture programs in Iowa. Data were collected from junior and senior students in a sample of 30 high schools which provided vocational agriculture programs during the 1974-75 school year. A total of 633 students participated in the study.

In completing the instruments, each student was expected to indicate his/her place of residence. Based upon the students' place of residence, the following groups were identified and studied:

Group 1 - Vocational agriculture students who lived on a farm (on-farm students).

Group 2 - Vocational agriculture students who did not live on a farm (off-farm students).

The instruments used in collecting the data for this study are as follows:

A. Personal, Family, and Community Data Related to Educational and Occupational Plans of Iowa Vocational Agriculture Students. This instrument was developed to assess the personal, family and community variables related to the educational and occupational plans of high school vocational agriculture students.

B. Agribusiness Achievement Test. This instrument, developed by Peterson, et al. was selected to assess vocational agriculture students' achievement in the following areas of agriculture:

1. Animal Science.
2. Plant and Soil Science.
3. Management.
4. Mechanics.

The data for this study were collected by administering these instruments to participants during December, 1974 and January, 1975. Data from the instruments were tabulated, scored, and transferred to IBM cards. The Agribusiness Achievement Tests were hand scored by the research project staff using scoring keys provided by the publisher of the tests. The raw scores were transformed to standard scores.

Data from the instruments were analyzed utilizing computer facilities at the Computation Center, Iowa State University, Ames, Iowa. The statistics used in analyzing the data included chi-square and three-way analysis of variance.

Summary of Findings

This research study was a descriptive investigation of possible differences in selected factors related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students.

The findings of the study are as follows:

1. Over 81 percent of the junior and senior vocational agriculture students participating in this study indicated that they lived on a farm. About 56 percent of the students living on a farm were juniors and approximately 44 percent were seniors. Approximately 63 percent of the students not living on a farm were juniors and about 37 percent were seniors.
2. A chi-square value of 5.68 was calculated for the relationship

between students' grade level and students' place of residence. This chi-square value is not significant at the .05 level of probability.

3. The analysis of variance calculation revealed a significant ($P < .01$) F ratio of 17.78 for mean differences in semesters of vocational agriculture completed between students who lived on a farm and students who did not live on a farm. It was determined that a mean response of 5.58 for students living on a farm (Group 1) is significantly ($P < .01$) greater than the mean response of 4.76 observed for students who were not living on a farm (Group 2.).
4. An F ratio of 6.49 was observed for differences in mean responses to grades normally received in vocational agriculture between on-farm and off-farm vocational agriculture students. This F ratio with 1 and 560 degrees of freedom is significant at the .05 level of probability. A mean response of 4.83 for Group 2 is significantly greater than the mean response of 4.38 for Group 1. It should be pointed out that a lower mean response to this variable would indicate they received higher grades in vocational agriculture.
5. A significant ($P < .01$) F ratio of 8.14 was observed for differences in mean responses to grades received in all courses, between on-farm and off-farm vocational agriculture students. It was determined that a mean response of 5.49 for Group 2 is significantly greater than the mean response of 4.99 for Group 1. It should again be pointed out that a lower mean response for

this variable would indicate higher grades normally received in all courses.

6. A significant ($P < .001$) chi-square value of 35.68 was observed for the relationship between students' participation in the FFA and students' place of residence. Over 89 percent of the students living on a farm indicated they participated in the FFA. Whereas, only 66.4 percent of the students who were not living on a farm indicated they participated in the FFA.
7. A significant ($P < .001$) chi-square value of 16.02 was observed for the relationship between students' participation in the 4-H Club and students' place of residence. About 32 percent of the students living on a farm indicated they participated in the 4-H Club. Whereas, 12.7 percent of the students who did not live on a farm indicated they participated in 4-H Club. About 29 percent of the total group indicated they participated in the 4-H Club.
8. A significant ($P < .001$) chi-square value of 43.52 was observed for the relationship between students' place of residence and students' occupational choice. Over 54 percent of the students participating in this study indicated they planned to enter an on-farm agricultural occupation upon completion of their formal education. About 17 percent and 22 percent planned to enter off-farm and non-agricultural occupations respectively. Almost 61 percent of those students living on a farm indicated they planned to enter an on-farm agricultural occupation. Over 30 percent of those students not living on a farm had selected an

on-farm agricultural occupation.

9. A chi-square value of .72 was observed for the relationship between students' place of residence and students' educational plans upon graduation from high school. Over 26 percent of the students participating in this study indicated they planned to attend an area vocational school; 17.6 percent planned to attend a four-year college or university; and 55.6 percent planned to get a full-time job and not attend college upon graduation from high school.
10. No significant F ratio was observed for differences in the number of years of posthigh school education planned between on-farm and off-farm vocational agriculture students.
11. A significant ($P < .001$) chi-square value of 55.99 was calculated for the relationship between students' place of residence and extent of students' working outside their family and home or farm. Over 58 percent of the students who did not live on a farm indicated that they had a fairly regular job outside the family and home or farm. Whereas, 22.5 percent of those students living on a farm indicated that they had a fairly regular job outside the family and home or farm. Only 19 percent of the students indicated they did not work outside the family and home or farm.
12. A significant ($P < .05$) chi-square value of 17.21 was observed for the relationship between students' place of residence and students' indication of the person having the most influence on their occupational choice. Over 46 percent of the students

living on a farm indicated that their father had the most influence on their occupational choice. Whereas, 33.6 percent of the students not living on a farm indicated their father had the most influence.

13. An F ratio of 5.34 was observed for differences between on-farm and off-farm students for their mean ratings of how certain they are that they will enter the occupation they have chosen. This F ratio with 1 and 560 degrees of freedom is significant at the .05 level of probability. It was determined that a mean rating of 7.04 for Group 1 students is significantly greater than the mean rating of 6.23 for Group 2 students.
14. The analysis of variance for students perception of the amount of thought they had given to their occupational choice revealed a significant ($P < .05$) F ratio of 3.98. A mean rating of 7.73 for Group 1 is significantly greater than the mean rating of 6.99 for Group 2.
15. An F ratio of 23.75 was observed for differences in group mean ratings by students for their perception of the ability they have for the occupation they are planning to enter. This F ratio with 1 and 560 degrees of freedom is significant at the .01 level of probability. It was determined that a mean rating of 8.01 for Group 1 is significantly ($P < .01$) greater than the mean rating of 6.80 for Group 2.
16. A significant ($P < .01$) F ratio of 15.05 was observed for differences in the mean ratings of the two student groups regarding the amount of work experience they had received in

the occupation they are planning to enter. A mean rating of 7.37 for Group 1 is significantly greater than a mean rating of 5.60 for Group 2.

17. The analysis of variance calculation for students' perception of knowledge of the occupation they are planning to enter revealed a significant ($P < .01$) F ratio of 9.66. It was determined that a mean rating of 7.37 for Group 1 is significantly greater than a mean rating of 6.31 for Group 2.
18. A significant ($P < .01$) F ratio of 8.73 was observed for differences in mean ratings between on-farm and off-farm students regarding their perception of the value of their high school training for the occupation they are planning to enter. A mean rating of 5.71 for Group 1 is significantly greater than the mean rating of 4.82 for Group 2.
19. The analysis of variance calculation for students' perception of the amount of training their high school had provided for the occupation they are planning to enter revealed a significant ($P < .01$) F ratio of 11.95. A mean rating of 5.15 for Group 1 is significantly greater than a mean rating of 4.12 for Group 2.
20. No significant F ratio was observed for differences in group mean ratings regarding the amount of encouragement students had received from their father or mother to continue their education beyond high school.
21. No significant F ratio was observed for differences in group mean ratings regarding the amount of encouragement students had received from their father or mother to attend a post-

secondary area vocational school upon graduation from high school.

22. An analysis of variance calculation revealed no significant differences in group mean ratings for the amount of encouragement students had received from their father to attend a four-year college or university upon graduation from high school.
23. A significant ($P < .05$) F ratio of 4.19 was observed for differences between the mean ratings of on-farm and off-farm students regarding the amount of encouragement they had received from their mother to attend a four-year college or university upon graduation from high school. A mean rating of 3.06 for Group 1 is significantly greater than a mean rating of 2.62 for Group 2.
24. No significant F ratio was observed for differences in the amount of encouragement students had received from their vocational agriculture instructor to attend a postsecondary area vocational school upon graduation from high school.
25. A significant ($P < .05$) F ratio of 4.22 was observed for group mean differences regarding the amount of encouragement students had received from their vocational agriculture instructor to attend a four-year college or university upon graduation from high school. A mean rating of 2.74 for Group 1 is significantly greater than a mean rating of 2.18 for Group 2.
26. A significant ($P < .01$) F ratio of 8.19 was observed for differences between the mean ratings of on-farm students and off-farm students regarding their perception of the value of

their high school vo-ag courses completed in preparing them for the occupation they are planning to enter. It was determined that a mean rating of 5.60 for Group 1 is significantly greater than the mean rating of 4.60 for Group 2.

27. The three-way analysis of variance revealed a significant ($P < .01$) F ratio of 13.07 for differences in students' perception of the value of their FFA program in preparing them for the occupation they are planning to enter. A mean rating of 5.23 for Group 1 is significantly greater than the mean rating of 3.74 for Group 2.

28. A significant ($P < .01$) F ratio of 12.74 was observed for differences in mean ratings between on-farm and off-farm students for their perception of the value of their vo-ag courses completed in preparing them to attend an area vocational school. A mean rating of 4.77 for Group 1 was found to be significantly greater than the mean rating of 3.60 for Group 2.

29. A significant ($P < .01$) F ratio of 8.78 was observed for differences in mean ratings between the two student groups for their perception of the value of their vo-ag courses completed in preparing them to attend a four-year college or university. A mean rating of 3.90 for Group 1 is significantly greater than the mean rating of 2.88 for Group 2.

30. The analysis of variance calculation revealed a significant ($P < .01$) F ratio of 8.02 for group differences in students' perception of the value of their high school courses completed in preparing them to attend an area vocational school. A mean

rating of 4.79 for Group 1 is significantly greater than the mean rating of 3.91 for Group 2.

31. The analysis of variance for students' perception of the value of their high school courses completed in preparing to attend a four-year college or university revealed an F ratio of 4.15. This F ratio with 1 and 560 degrees of freedom is significant at the .05 level of probability. It was found that a mean rating of 4.51 for Group 1 is significantly greater than the mean rating of 3.75 for Group 2.

32. A significant ($P < .01$) F ratio of 41.61 was observed for differences in group mean ratings for students' perception of the value of their supervised occupational experience program in preparing for the occupation they are planning to enter. It was determined that a mean rating of 5.45 for Group 1 is significantly greater than the mean rating of 4.58 for Group 2.

33. The analysis of variance calculation for students' perception of chances for success as a student attending a four-year college or university in animal science revealed a significant ($P < .01$) F ratio of 7.39. A mean rating of 4.48 for Group 1 is significantly greater than a mean rating of 3.64 for Group 2.

34. A significant ($P < .01$) F ratio of 11.16 was observed for group mean differences for students' perception of chances for success as a student attending a four-year college or university and studying plant and soil science. It was determined that a mean rating of 3.96 for Group 1 is significantly greater than a mean rating of 2.99 for Group 2.

35. A significant ($P < .05$) F ratio of 5.01 was observed for differences in mean ratings between on-farm and off-farm students regarding their perception of chances for success as a student attending a four-year college or university and studying agricultural mechanics. A mean rating of 5.45 for Group 1 is significantly greater than a mean rating of 4.60 for Group 2.

36. A significant ($P < .01$) F ratio of 12.26 was observed for differences between on-farm and off-farm students regarding their perception of chances for success as a student attending a four-year college or university in agricultural management. A mean rating of 5.16 for Group 1 is significantly greater than the mean rating of 4.02 for Group 2.

37. The analysis of variance calculation for students' perception of chances for success as a student attending an area vocational school in animal science revealed an F ratio of 10.26 which is significant at the .01 level of probability. It was revealed that a mean rating of 4.89 for Group 1 is significantly greater than a mean rating of 3.95 for Group 2.

38. A significant ($P < .01$) F ratio of 12.61 was observed for differences between on-farm and off-farm students regarding their perception of chances for success as a student attending an area vocational school in plant and soil science. A mean rating of 4.49 for Group 1 was found to be significantly greater than a mean rating of 3.46 for Group 2.

39. The analysis of variance revealed a significant ($P < .01$) F ratio for differences between on-farm and off-farm students

regarding their perception of chances for success as a student attending an area vocational school in agricultural mechanics. A comparison of the group means revealed that a mean rating of 6.19 for Group 1 is significantly greater than a mean rating of 5.09 for Group 2.

40. A significant ($P < .01$) F ratio of 21.13 was observed for differences between on-farm and off-farm students regarding their perception of chances of success as a student attending an area vocational school in agricultural management. A mean rating of 5.74 for Group 1 students is significantly greater than a mean rating of 4.30 for Group 2 students.

41. A three-way analysis of variance revealed an F ratio of 14.46 for differences in mean Animal Science Achievement Test scores between on-farm and off-farm vocational agriculture students. This F ratio is significant at the .01 level of probability. A comparison of the two group mean scores revealed that a mean score of 57.64 for Group 1 students is significantly greater than a mean score of 54.26 for Group 2 students.

42. A significant ($P < .01$) F ratio of 8.75 was observed for differences in mean Plant and Soil Science Achievement Test scores between on-farm and off-farm vocational agriculture students. A mean test score of 55.74 for Group 1 is significantly greater than a mean test score of 53.76 for Group 2.

43. The analysis of variance calculation revealed a significant ($P < .01$) F ratio of 15.76 for differences in mean Agricultural Mechanics Achievement Test scores between on-farm and off-farm vocational agriculture students. A mean test score of 59.66

for Group 1 is significantly greater than a mean test score of 57.46 for Group 2.

44. A significant ($P < .01$) F ratio of 9.93 was observed for differences in Agricultural Management Achievement Test scores between on-farm and off-farm vocational agriculture students. A comparison of the two group means revealed that a mean test score of 58.64 for Group 1 students is significantly greater than a mean test score of 56.26 for Group 2 students.

Conclusions

The following conclusions were drawn based upon the findings of this study:

1. The majority (81.5 percent) of the junior and senior students participating in this study indicated that they lived on a farm. Fifty-seven percent of the students living on a farm were juniors and 43 percent were seniors.
2. The vocational agriculture students who indicated that they were living on a farm had completed a greater number of semesters of vocational agriculture than vocational agriculture students who were not living on a farm. The mean semesters of vocational agriculture completed by the total group of students participating in the study was 5.42 which would indicate that the majority of the students in this study had been enrolled in vo-ag since their freshman year of school.
3. Students living on a farm (Group 1 students) indicated they received higher grades in vocational agriculture than those students who were not living on a farm (Group 2 students).

4. On-farm students (vo-ag students living on a farm) indicated they normally received higher grades in all their courses than off-farm students (students who were not living on a farm).
5. It was determined that a relationship does exist between students' participation in the FFA and students' place of residence. Over 89 percent of the students living on a farm indicated they participated in the FFA. Whereas, only 66.4 percent of the students who were not living on a farm indicated they participated in the FFA. Over 85 percent of all students responding to this item of the questionnaire indicated they participated in the FFA.
6. It was determined that a relationship exists between students' participation in the 4-H Club and students' place of residence. Approximately 32 percent of the students living on a farm indicated they participated in the 4-H Club. Whereas, 12.7 percent of the students who did not live on a farm indicated they participated in 4-H Club. About 30 percent of the total group indicated they participated in the 4-H Club.
7. A relationship exists between students' place of residence and students' occupational plans upon completion of their formal education. Over 54 percent of the students participating in this study indicated they planned to enter an on-farm agricultural occupation. About 17 percent and 22 percent planned to enter off-farm and non-agricultural occupations respectively. Almost 61 percent of those students living on a farm indicated they planned to enter an on-farm agricultural occupation. Over

30 percent of those students not living on a farm had selected an on-farm agricultural occupation.

8. A mean response of 2.26 for the total group of students participating in this study would indicate that they planned to receive an average of less than two years of formal education beyond high school.
9. It was determined that a relationship does exist between students' place of residence and the extent of students' working outside the family and home or farm, while in high school. Over 58 percent of the students who did not live on a farm indicated that they had a fairly regular job outside the family and home or farm. Whereas, 22.5 percent of those students living on a farm indicated they had a fairly regular job outside the family and home or farm. Only 19 percent of the students indicated they did not work outside the family and home or farm.
10. It may be concluded that a relationship exists between students' indication of the person having the most influence on their occupational choice, and students' place of residence. Over 46 percent of the students living on a farm indicated that their father had the most influence on their occupational choice. Whereas, 33.6 percent of the students who were not living on a farm indicated their father had the most influence.
11. Students who lived on a farm were more certain of their choice of occupation than students who did not live on a farm. A total group mean rating of 6.89 would suggest that students participating in this study were fairly certain they will enter the

occupation they have selected.

12. It was found that on-farm students had given a greater amount of thought to their choice of occupation than off-farm students. A mean rating of 7.59 for the total group would suggest that these students had given a considerable amount of thought to their choice of occupation.

13. Students living on a farm indicated a greater ability for the occupation they are planning to enter than did students who did not live on a farm. A total group mean rating of 7.79 would suggest that students feel rather competent for the occupation they are planning to enter.

14. It was determined that students living on a farm had received a greater amount of work experience for the occupation they are planning to enter than students who did not live on a farm. A mean rating of 7.04 for the total group would indicate a considerable amount of work experience these students had received in the occupation they are planning to enter upon completion of their formal education.

15. It may be concluded that on-farm students perceived their knowledge of the occupation they had chosen to be greater than off-farm students' perception of their knowledge of the occupation they had selected. A mean rating of 7.18 for the total group would indicate that students perceived themselves as having considerable knowledge of the occupation they are planning to enter.

16. Students living on a farm indicated a higher rating in regard

to their perception of the vlaue of their high school training for the occupation they are planning to enter, then did students who were not living on a farm. A total group mean rating of 5.5 would indicate slightly above average rating for this variable.

17. It was found that on-farm students believed their high school was providing a greater amount of training for the occupation they are planning to enter than did off-farm students. A mean rating of 4.96 for the total group would indicate that students perceived their high school to be providing slightly less than average amount of training for the occupation they are planning to enter.
18. A total group mean rating of 4.68 would indicate that students had received slightly less than average amount of encouragement from their father to continue their education beyond high school.
19. A total group mean rating of 5.36 would suggest that students had received above average amount of encouragement from their mother to continue their education beyond high school.
20. It would appear that students had received a greater amount of encouragement from their mother than their father to continue their education beyond high school.
21. A mean rating of 3.41 for the total group would suggest that students had received a low amount of encouragement from their father to attend an area vocational school upon graduation from high school.
22. A mean rating of 2.49 for the total group would suggest that

students had received a relatively low amount of encouragement from their father to attend a four-year college or university upon graduation from high school.

23. It would appear that students had received a greater amount of encouragement to attend an area vocational school than a four-year college or university.

24. A total group mean rating of 3.15 would indicate that students had received a relatively low amount of encouragement from their mother to attend an area vocational school upon graduation from high school.

25. Students who were living on a farm had received a greater amount of encouragement from their mother to attend a four-year college or university than did students who were not living on a farm. A total group mean of 2.98 would suggest that students had received a rather low amount of encouragement from their mother to attend a four-year college or university upon graduation from high school.

26. A total group mean rating of 3.06 would suggest that students had received a relatively low amount of encouragement from their vocational agriculture instructor to attend an area vocational school upon graduation from high school.

27. It may be concluded that on-farm students had received a greater amount of encouragement from their vo-ag instructor to attend a four-year college or university than did off-farm students. A total group mean rating of 2.64 would suggest a relatively low amount of encouragement students had received from their vo-ag

instructor to attend a four-year college or university.

28. It may be concluded that students living on a farm perceived their vo-ag courses completed to be of greater value in preparing them for the occupation they are planning to enter than did students who were not living on a farm. A total group mean rating of 5.41 would indicate that students' perception of the value of their vo-ag courses completed for the occupation they are planning to enter was just above the mid-point of the scale. This could be interpreted as just above average rating.
29. Students living on a farm perceived the value of their FFA program in preparing for the occupation they are planning to enter to be greater than did students who were not living on a farm. A total group mean of 4.95 would suggest slightly less than average rating.
30. It was found that on-farm students perceived their vo-ag courses completed to be of greater value that did off-farm students for preparing to attend an area vocational school. A total group mean rating of 4.55 would indicate a less than average rating.
31. Students living on a farm perceived the value of their vo-ag courses to be of greater value than did off-farm students for preparing to attend a four-year college or university. A total group mean rating of 3.71 would suggest a relatively low rating for this variable.
32. It appears that students perceived their vo-ag courses to be of greater value in preparing to attend an area vocational school than for preparing to attend a four-year college or university.

33. It may be concluded that on-farm students perceived a higher value of their high school courses in preparing to attend an area vocational school than did off-farm students. A total group mean rating of 4.63 would suggest a below average rating for this variable.

34. A higher rating was observed by on-farm students than off-farm students regarding the value of their high school courses completed in preparing them for attending a four-year college or university. It may also be concluded that a total group mean rating of 4.37 would indicate a below average rating for this variable.

35. On-farm students perceived the value of their supervised occupational experience for the occupation they are planning to enter to be greater than the value perceived by off-farm students. A mean rating of 5.29 for the total group of students would indicate an above average rating for this statement.

36. It may be concluded that on-farm students perceived their chances of success as a student attending a four-year college or university in animal science to be greater than the chances of success perceived by off-farm students.

37. On-farm students perceived their chances for success as a student attending a four-year college or university in plant and soil science to be greater than chances of success perceived by off-farm students. A total group mean rating of 3.78 would indicate a below average rating for this variable.

38. It was found that on-farm students perceived their chances of

success for studying agricultural mechanics at a four-year college or university to be greater than did off-farm students.

39. Students living on a farm perceived their chances for success as a student in agricultural management at a four-year college or university to be greater than did students who were not living on a farm.

40. On-farm students perceived their chances for success in animal science at an area vocational school to be greater than did off-farm students.

41. It may be concluded that on-farm students perceived their chances of success as a student in plant and soil science at an area vocational school to be greater than chances of success perceived by off-farm students.

42. It was found that on-farm students perceived their chances for success in agricultural mechanics at an area vocational school to be greater than did off-farm students.

43. Students living on a farm perceived their chances for success in agricultural management at an area vocational school to be greater than did off-farm students.

44. From the analysis of the Animal Science Achievement Test scores, it may be concluded that vo-ag students living on a farm possessed a higher level of achievement in animal science than did vo-ag students who were not living on a farm.

45. An analysis of the Plant and Soil Science Achievement Test scores revealed that on-farm students possessed a higher level of achievement in plant and soil science than did off-farm students.

46. From the analysis of the Agricultural Mechanics Achievement Test scores, it was found that on-farm students possessed a higher level of achievement in agricultural mechanics than did off-farm students.
47. An analysis of the Agricultural Management Achievement Test scores found that students who were living on a farm possessed a higher level of achievement in agricultural management than students who were not living on a farm.

Limitations

The generalizations made from this research study should be subject to the following limitations:

1. This study was basically an ex post facto research design. Therefore, no attempts were made to control or manipulate the independent variables.
2. The population for this study consisted of students enrolled in secondary vocational agriculture programs in Iowa. Generalizations from this study outside the state of Iowa should be made with caution.
3. This study was limited to junior and senior vocational agriculture students. Therefore the extent of generalization to other grade levels or occupational areas should be done with caution.
4. The sample for this research study consisted of 30 schools. No attempt was made to identify participants by selecting a completely randomized sample of students. The data collection instruments were administered in group settings by vocational agriculture instructors.

Recommendations

The findings of this study reveal that there were differences in selected factors related to educational decision-making between on-farm and off-farm vocational agriculture students. The following are recommendations preceded by 14 selected conclusions upon which the recommendations were based. These recommendations appear worthy of consideration by high school vocational agriculture instructors, vocational guidance counselors, teacher educators, state department personnel, and others who are in a position to assist students in establishing and attaining their educational and occupational goals. These statements and recommendations should have direct implications for those individuals involved in the development of secondary vocational agriculture programs.

1. Over 81 percent of the vocational agriculture students participating in this study indicated that they lived on a farm.
   A. Instructional programs in vocational agriculture should continue to include and expand production agriculture oriented courses to meet the needs of farm and production oriented students. However, some students with farm backgrounds may desire to prepare for off-farm agricultural occupations, and appropriate instruction should be provided for them.
   B. The vocational agriculture curriculum should include specialized courses in production agriculture following one or two years of basic instruction.
   C. Entrepreneurship in agricultural production should be encouraged, and the curriculum should be structured to include such training.

D. On-farm vocational agriculture students have many opportunities for appropriate practical, participating experiences in agriculture through supervised farming programs. Students living on a farm should be encouraged to develop and expand their supervised farming programs to facilitate transition between school and the world of work.

2. Less than 20 percent of the students participating in this study indicated that they did not live on a farm.

   A. The instructional programs in vocational agriculture should continue to be broadened to include training for employment in both production agriculture and agribusiness occupations.

   B. The vocational agriculture curriculum should include specialized courses in agricultural production and agribusiness following one or two years of basic instruction.

   C. There is a need for appropriate practical, participating experiences in agriculture through supervised occupational experience programs to facilitate transition between school and world of work. Students who do not reside on a farm should be encouraged to take advantage of the many opportunities to develop appropriate supervised occupational experience programs.

   D. Vo-ag students who do not live on a farm but have interests in agriculture should be informed of the benefits of the agricultural program for both on-farm and off-farm students.

3. Vocational agriculture students who indicated they are living on a farm had completed a greater number of semesters of vocational

agriculture than vo-ag students who were not living on a farm.

A. Junior high school occupational exploratory programs should be developed to assist students in identifying their vocational interests, assessing their vocational strengths and setting tentative occupational goals.

B. Relevant instruction in agriculture should be provided that will meet the needs of on-farm and off-farm students.

C. Alternative teaching methods and techniques should be pursued in teaching vocational agriculture to students with diverse home backgrounds.

4. Students living on a farm indicated that they received higher grades in vocational agriculture than students who were not living on a farm.

A. Alternative procedures should be pursued in providing off-farm students with background and experiences in agriculture.

B. Vocational agriculture instructors should place greater emphasis on techniques and activities for motivating off-farm students.

C. The background and experiences of on-farm students should be utilized in assisting off-farm students in acquiring the knowledge and skills needed in agricultural related occupations.

5. This study found that a relationship did exist between students' participation in the FFA and students' place of residence.

A. Since the FFA is an integral part of the vocational agriculture program, all vo-ag students should become active members

of the FFA.

B. Off-farm students should be provided with a greater awareness of the many opportunites available to them in the FFA.

C. Benefits of participation in the FFA by on-farm and off-farm students should be emphasized.

D. More recognition through awards and honors should be provided to off-farm students.

6. It was found that students participating in this study planned to receive an average of less than two years of formal education beyond high school.

A. Vocational agriculture students should be provided with current information about agricultural programs and curricula opportunities at postsecondary area vocational schools and four-year colleges and universities.

B. Instructional programs in vocational agriculture should be structured in such a manner to assure that students will obtain the necessary knowledge and skills for immediate entry into agricultural occupations, as well as the option to pursue additional formal education beyond high school.

7. It was found that students' fathers were very influential in their occupational and educational plans, particularly for on-farm students.

A. Vocational agriculture instructors and guidance counselors should aid parents in assisting their children in establishing and attaining their educational and occupational goals.

B. Parents should be provided with current occupational and educational information in agriculture.

C. Parents should be involved in planning and conducting educational experiences for their children.

8. Students living on a farm were more certain of their choice of occupation, had given more thought to their choice of occupation, and indicated a greater ability for the occupation they are planning to enter, than did off-farm students.

A. Continuous efforts should be made to assist vo-ag students in formulating and attaining their occupational goals.

B. Instruction in vocational agriculture should provide the necessary knowledge and skills for agricultural occupations which students plan to enter.

9. On-farm and off-farm students differed in the amount of occupational experience they had received for the occupation they are planning to enter.

A. Appropriate practical, participating experiences in agriculture through supervised occupational experience programs should be an individualized part of the curriculum for on-farm and off-farm students in agriculture.

B. Alternative types of supervised occupational experience programs should be provided to meet the needs of both on-farm and off-farm students.

C. Supervised occupational experience programs should be recognized as an integral part of the vocational agriculture program and resources should be allocated to plan and

coordinate such programs.

10. On-farm and off-farm students differed in their perceptions of the value and the amount of high school training they had received for the occupation they are planning to enter.
    A. Career education concepts should be integrated into the high school curriculum.
    B. Single-teacher vocational agriculture departments should become multiple-teacher departments to more effectively prepare on-farm and off-farm students for the occupation they are planning to enter.
    C. The vocational agriculture curriculum should be an integral part of the high school curriculum.
11. It was found that on-farm students had received a greater amount of encouragement from their vo-ag instructor to attend a four-year college or university than did off-farm students.
    A. Instructors of vocational agriculture and guidance counselors should inform on-farm and off-farm students of the various educational opportunities available at postsecondary area vocational schools and four-year institutions.
    B. Vocational agriculture instructors should have access to current educational and occupational information in agriculture.
12. Students living on a farm perceived their vo-ag courses to be of greater value in preparing for the occupation they are planning to enter than did students who were not living on a farm.
    A. Greater efforts should be expended to help students recognize

how agricultural knowledge and skills learned can be utilized in the occupations they are planning to enter.

B. Specific competencies taught in vocational agriculture should be those required to enter and succeed in on-farm and off-farm agricultural occupations.

13. On-farm and off-farm students differed in their perceptions of the value of their vocational agriculture and other courses completed in preparing them to continue their formal education beyond high school.

A. Vocational agriculture students should be informed of the various alternatives available to them for receiving post-secondary education.

B. Greater emphasis should be placed on the articulation between secondary and postsecondary programs of agriculture.

C. Postsecondary institutions should assess the knowledge and skills possessed by incoming students and provide educational experiences accordingly.

D. Students should be informed of the value of their high school curriculum in preparing to attend an area vocational school or four-year institution, should they elect to continue their formal education beyond high school.

14. On-farm and off-farm students differed in their achievement in animal science, plant and soil science, agricultural mechanics and agricultural management.

A. Student's competency level in agriculture should be continually evaluated and provisions should be made for advanced and

special needs students.

B. The agricultural background and experiences of on-farm students should be utilized to challenge and motivate off-farm students to reach their potential of achievement in agriculture.

REFERENCES

1. Byler, B.L. Analysis of factors related to the educational plans of Iowa vocational agriculture students. Ames, Iowa: Department of Agricultural Education, Iowa State University, 1975.

2. Byler, B.L. and D.A. Kaas. A study of factors associated with the occupational plans of Iowa vocational agriculture students. Ames, Iowa: Department of Agricultural Education, Iowa State University, 1976.

3. Campbell, D.T. and J.C. Stanley. Experimental and quasi-experimental designs for research. Chicago, Illinois: Rand McNally and Co., 1966.

4. Directory vocational agriculture departments, 1974-75, Des Moines, Iowa: State Department of Public Instruction, 1974.

5. Ferguson, G.A. Statistical analysis in pyschology and education. New York: McGraw-Hill Book Co., 1971.

6. Information relating to vocational education for agriculture and agribusiness occupations. Washington, D.C.: U.S.O.E., Division of Vocational and Technical Education, 1975.

7. Opportunities in Iowa's area schools. Des Moines, Iowa: State Department of Public Instruction.

8. Peterson, R.L., L.H. Harvill, and J.T. Hoerner. Agribusiness Achievement Test. Boston: Houghton Mifflin Co., 1973.

9. Steel, D.G. and J.H. Torri. Principles and procedures of statistics. New York: McGraw-Hill Book Co., 1960.

10. Summary of educational activities in agriculture/agribusiness provided by local school districts. Des Moines, Iowa: State Department of Public Instruction, 1974.

APPENDIX A

PERSONAL, FAMILY, AND COMMUNITY DATA INSTRUMENT

PERSONAL, FAMILY, AND COMMUNITY DATA RELATED TO EDUCATIONAL AND OCCUPATIONAL PLANS OF IOWA VOCATIONAL AGRICULTURE STUDENTS

Dear Students:

The Agricultural Education Department at Iowa State University would like to thank you for cooperating with us in conducting this study. We are attempting to determine the educational and occupational goals of Iowa vocational agriculture students and factors related to these goals.

This questionnaire is an attempt to get a better picture of the problems young people face in choosing their life's occupation, and the feelings they have toward these problems. By carefully filling out this questionnaire, you will assist us in acquiring a better understanding of these problems. This information will be of great value to your vocational agriculture instructor, guidance counselor, and other teachers in your school in developing programs of vocational agriculture, counseling, and occupational orientation.

Thank you very much for your cooperation in completing this questionnaire.

PLEASE FOLLOW THESE DIRECTIONS:

1. Read each item carefully. Answer to the best of your knowledge.

2. Be sure to answer each question. Where there are brackets, fill in an "x" by the response which answers the question the way you truly feel, not the way you think other people will want you to answer them. Where only a space is left, enter the words called for.

3. Part II will ask that you rate each statement on a rating scale from low to high.

4. If you have any questions about how to complete this questionnaire, please ask your vocational agriculture instructor for assistance.

PART I

1. My name is _____

2. I am a

   1. ( ) Freshman
   2. ( ) Sophomore
   3. ( ) Junior
   4. ( ) Senior

3. The number of semesters of vocational agriculture I have completed is (including this semester):

   1. ( ) 1 semester
   2. ( ) 2 semesters
   3. ( ) 3 semesters
   4. ( ) 4 semesters
   5. ( ) 5 semesters
   6. ( ) 6 semesters
   7. ( ) 7 semesters
   8. ( ) 8 semesters

4. The types of grades I normally get in vocational agriculture are:

   1. ( ) all A's
   2. ( ) mostly A's but few B's
   3. ( ) half A's and B's
   4. ( ) about equal A's, B's and C's
   5. ( ) mostly B's and C's
   6. ( ) mostly C's but few B's
   7. ( ) C's and D's
   8. ( ) D's and F's

5. The types of grades I normally get in all my courses are:

   1. ( ) all A's
   2. ( ) mostly A's but few B's
   3. ( ) half A's and B's
   4. ( ) about equal A's, B's and C's
   5. ( ) mostly B's and C's
   6. ( ) mostly C's but few B's
   7. ( ) C's and D's
   8. ( ) D's and F's

6. The kinds of activities in which I participate are (please check all that apply):

( ) annual	( ) 4-H
( ) athletics	( ) hobby club
( ) band-orchestra	( ) student government
( ) chorus	( ) other _____
( ) debates	( ) _____
( ) FFA	( ) _____

7. I live

   1. ( ) on a farm
   2. ( ) in the open country, but not on a farm
   3. ( ) in a village under 2,500
   4. ( ) in a town of 2,500-10,000
   5. ( ) in a city over 10,000

8. The occupation that I plan to enter is (indicate particular type of job)

   _____.

9. Upon completion of high school, I plan to

   1. ( ) Attend a postsecondary area vocational school or community college. Name of area vocational school or community college planning to attend.

   2. ( ) Attend a four-year college or university. Name of college or university planning to attend _____.

   3. ( ) Get a full-time job or work for myself and not attend college.

10. The number of years of further education I plan to get beyond high school is

    1. ( ) none, or less than one year
    2. ( ) one year
    3. ( ) two years
    4. ( ) three years
    5. ( ) four years
    6. ( ) five years
    7. ( ) six years
    8. ( ) seven years
    9. ( ) eight years or more

11. As to working while I am in high school

    1. ( ) I have a fairly regular job ouside my family and home or farm.
    2. ( ) I sometimes work outside my family and home or farm.
    3. ( ) I do not work outside my family and home or farm.

12. The person who had the most influence on my choice of an occupation was

    1. ( ) my father
    2. ( ) my mother
    3. ( ) my brother or sister
    4. ( ) another relative
    5. ( ) counselor
    6. ( ) close friend
    7. ( ) vo-ag instructor
    8. ( ) another teacher
    9. ( ) other than above _____.

PART II

Please rate each of the following statements on a 10 point scale from low to high. Read each statement carefully and rate how you feel about that statement by circling either 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. A score of 0 is the lowest possible rating and a score of 10 is the highest possible rating. Circle only one number for each statement to indicate how you feel about that statement.

STATEMENT	RATING										
	Low										High
1. Amount of certainty that I will enter the occupation I have chosen.....	0	1	2	3	4	5	6	7	8	9	10
2. Amount of thought I have given to my choice of occupation.....	0	1	2	3	4	5	6	7	8	9	10
3. My ability for the occupation I have chosen.....	0	1	2	3	4	5	6	7	8	9	10
4. Amount of work experience I have had in the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
5. My knowledge of the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
6. Value of my high school training for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
7. Amount of training my high school has provided for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
8. Amount of encouragement received from my father to continue my education beyond high school.....	0	1	2	3	4	5	6	7	8	9	10
9. Amount of encouragement received from my mother to continue my education beyond high school.....	0	1	2	3	4	5	6	7	8	9	10
10. Amount of encouragement received from my father to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10

	Low										High
11. Amount of encouragement received from my father to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
12. Amount of encouragement received from my mother to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
13. Amount of encouragement received from my mother to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
14. Amount of encouragement received from my vo-ag instructor to attend a postsecondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
15. Amount of encouragement received from my vo-ag instructor to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
16. Value of my high school vo-ag courses completed in preparing me for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
17. Value of FFA program in preparing me for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
18. Value of my vo-ag courses completed in preparing me to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
19. Value of my vo-ag courses completed in preparing me to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
20. Value of my high school courses in preparing me to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
21. Value of my high school courses in preparing me to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
22. Value of my supervised occupational experience program (supervised farming or agribusiness placement) in preparing me for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10

		Low										High
23.	My chances of success as a student if I were to attend a four-year college or university and study animal science.....	0	1	2	3	4	5	6	7	8	9	10
24.	My chances of success as a student if I were to attend a four-year college or university and study plant and soil science.....	0	1	2	3	4	5	6	7	8	9	10
25.	My chances of success as a student if I were to attend a four-year college or university and study agricultural mechanics.....	0	1	2	3	4	5	6	7	8	9	10
26.	My chances of success as a student if I were to attend a four-year college or university and study agricultural management.....	0	1	2	3	4	5	6	7	8	9	10
27.	My chances of success as a student if I were to attend a postsecondary area vocational school and study animal science.....	0	1	2	3	4	5	6	7	8	9	10
28.	My chances of success as a student if I were to attend a postsecondary area vocational school and study plant and soil science.....	0	1	2	3	4	5	6	7	8	9	10
29.	My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural mechanics.....	0	1	2	3	4	5	6	7	8	9	10
30.	My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural management.....	0	1	2	3	4	5	6	7	8	9	10

APPENDIX B

COPY OF LETTER SENT TO VOCATIONAL AGRICULTURE INSTRUCTORS REQUESTING THEIR COOPERATION IN CONDUCTING THE STUDY

Iowa State University of Science and Technology Ames, Iowa 50010

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

The staff in the Agricultural Education Department at Iowa State University is initiating a study being funded through the Agriculture and Home Economics Experiment Station to ascertain the educational and occupational goals of high school juniors and seniors who are enrolled in vocational agriculture, and then compare these goals to personal variables which each student possesses.

The means by which we plan to collect the information for this study consists of two instruments. The first will be a general questionnaire covering the student variables in which we are interested. The second instrument is a two-hour standardized Agri-Business Achievement test to be administered to the students.

We are seeking your approval that we may use your school and vocational agriculture department at a part of the sample for this project. As your school's cooperation will benefit our goals, in return, we would hope that we could complement your vocational agricultural program by providing the results of the achievement test to your vocational agriculture instructor.

Please complete the enclosed stamped postcard and return it to us at your earliest convenience. If you have any questions, please write or call 515/294-5872. Upon your approval we will contact your vocational agriculture instructor.

Thank you for your time, and we will be looking forward to working with your school in the future.

Sincerely,

Harold R. Crawford Professor and Head Agricultural Education	Bennie L. Byler Assistant Professor Agricultural Education	Tom Archer Research Assistant Agricultural Education

TA/mdd

APPENDIX C

LIST OF HIGH SCHOOLS PARTICIPATING IN THE STUDY

SCHOOLS RANDOMLY SELECTED TO PARTICIPATE IN THE STUDY

School	Vocational Agriculture Instructor
Adair-Casey Comm. Adair, Iowa	Doug Timmons
Algona Comm. Algona, Iowa	Wendell Phelps
Atlantic Comm. Atlantic, Iowa	Ronald Beaver
Belle Plaine Comm. Belle Plaine, Iowa	Howard Marsh
Brooklyn-Guernsey-Malcom Comm. Brooklyn, Iowa	Larry Dayton
Dunkerton Comm. Dunkerton, Iowa	Lyle Bare
East Greene Comm. Grand Junction, Iowa	David Tokheim
Graettinger Comm. Graettinger, Iowa	Charles Moser
Greenfield Comm Greenfield, Iowa	George Freese, Jr.
Iowa Valley Comm. Marengo, Iowa	Robert Taylor
LeMars Comm. LeMars, Iowa	John Rix
Maple Valley Comm. Mapleton, Iowa	Norman Mecklenburg
Mediapolis Comm. Mediapolis, Iowa	James Howell
M-F-L Comm. Monona, Iowa	John Wachter
Missouri Valley Comm. Missouri Valley, Iowa	Gene Weldon

School	Vocational Agriculture Instructor
Mt. Pleasant Comm. Mt. Pleasant, Iowa	Ralph Stuekerjuergen
Murray Comm. Murray, Iowa	Brent Hanna
Nashua Comm. Nashua, Iowa	Richard Gingrich
New Providence Comm. New Providence, Iowa	Gary Glawe
Odebolt-Arthur Comm. Odebolt, Iowa	Donald Kearney
Osage Comm. Osage, Iowa	Lewis Lauterbach
Oskaloosa Comm. Oskaloosa, Iowa	Charles Perdue
Pekin Comm. Packwood, Iowa	Allen Henigan
Riceville Comm. Riceville, Iowa	Kenneth Redmann
Rock Valley Comm.. Rock Valley, Iowa	Verlyn Sneller
Sheldon Comm. Sheldon, Iowa	Fred Van Loh
Southeast Polk Runnels, Iowa	James Appleget
Thompson Comm. Thompson, Iowa	Kingsley Johnson
West Liberty Comm. West Liberty, Iowa	Richard Wehde
Wilton Comm. Wilton, Iowa	Gary Bennett

APPENDIX D

FOLLOW-UP LETTER AND DIRECTIONS USED FOR ADMINISTERING THE INSTRUMENTS

Iowa State University of Science and Technology Ames, Iowa 50010

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

We appreciate your interest and cooperation in the completion of our survey of high school junior and senior vocational agriculture students, and sincerely thank you for your help. We hope that the results of this project will assist in conducting your vocational agriculture program.

Enclosed you will find a sufficient number of questionnaires and answer sheets for all of the junior and senior students who are enrolled in the vocational agriculture classes at your high school. To reduce cost and bulk of postage, we have included only enough test booklets for your largest class, either juniors or seniors. We have assumed that these instruments will be administered during regular class time, and that your regular classes will be no larger than the number of test booklets which we have included. If there are not enough materials, please call us immediately at 515/294-5872. and we will forward more materials.

We know that it would be impossible to completely coordinate the administration of these instruments among the thirty participating schools. We do not expect that the teachers administer them at the same time on the same day. As a matter of fact, it is our belief that the results would be better if the instruments were administered over a longer period. Therefore, we hope that you can administer these to your junior and senior vocational agriculture students between the dates of December 9 to January 17. Because of differing lengths and time of class periods among the schools, we are not attempting to coordinate any more than the order of instrument administration. Please fit our suggestions as best you can into your own situation.

We suggest that the instruments be administered on five different days. The first should be the questionnaire, followed by the four parts of the achievement test in the following order: (1) Animal Science, (2) Plant and Soil Science, (3) Mechanics, and (4) Management. The questionnaires will not take as long as the achievement tests, but we hope that you will make sure that all items are completely answered. Each of the parts of the achievement test will take approximately fifty minutes, forty minutes of which will be allowed for actual testing.

Enclosed you will find a sheet labeled "Test Administration". This contains the complete set of standardized directions for the administration of the Agri-Business Achievement Test. The paragraphs starred (**) are to be read aloud to the students. Although any soft leaded pencil may be used to mark the answer wheets, we have included pencils for your convenience. Please do not allow the students to use pens.

After all of the instruments have been completed by all of your junior and senior students in vocational agriculture (which will hopefully be on or before January 17), please return the test booklets, answer sheets, and completed questionnaires in the self-addressed, stamped envelop which we have included. We would like for you to keep one copy of the test booklet for your reference. The answer sheets will be scored and results will be made available to you as soon as possible. You may want to use the results of these achievement tests as a teaching-learning situation.

To reiterate, you might find the following helpful:
Check List of Data Collection:

_____(1) Administer the instruments, both the questionnaire and the achievement test to your high school junior and senior vocational agriculture students sometime between December 9 and January 17.

_____(2) Administer questionnaire - Will take approximately 30 minutes.

_____(3) Have each student complete the Name Block, Grade, Sex, Birth Date, and School information on his answer sheet. Specific directions for this are given in "The Pre-Test Session" part of the Test Administration directions.

_____(4) Administer the Achievement Test - Probably four different days would work best.

a) Animal Science Test - Allow approximately fifty minutes
b) Plant and Soil Science Test - Allow approximately fifty minutes
c) Mechanics Test - Allow approximately fifty minutes
d) Management Test - Allow approximately fifty minutes

_____(5) Return test booklets, answer sheets, and completed questionnaires to the Agricultural Education Department, Iowa State University.

_____(6) Review Test results with your students - Sometime in February.

If you have any questions, please call, We will be anxiously awaiting your completed instruments.

Sincerely,

Harold R. Crawford Professor and Head Agricultural Education	Bennie L. Byler Assistant Professor Agricultural Education	Tom Archer Graduate Assistant Agricultural Education

TA/lra

Encl.

P.S. The information collected for the questionnaires and instruments will remain confidential and will be reported in summary form only. Comparison among schools will not be made.

APPENDIX E

TABLE OF MEANS AND STANDARD DEVIATIONS FOR PERSONAL, FAMILY, AND COMMUNITY VARIABLES

Table 86. Means and standard deviations for personal, family and community variables

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Total Mean	S.D.
Semesters of vocational agriculture completed	5.58	1.61	4.76	1.89	5.42	1.69
Grades received in vocational agriculture.	4.38	1.79	4.83	1.62	4.46	1.77
Grades received in all courses.	4.99	1.57	5.49	1.38	5.09	1.55
Years of posthigh school education planned.	2.26	1.70	2.25	1.78	2.26	1.71
Amount of certainty that I will enter the occupation I have chosen.	7.04	2.48	6.23	2.65	6.87	2.53
Amount of thought I have given to my choice of occupation.	7.73	2.13	6.99	2.64	7.59	2.25
My ability for the occupation I have chosen.	8.01	1.76	6.80	2.33	7.79	1.93
Amount of work experience I have had in the occupation I plan to enter.	7.37	2.92	5.60	3.29	7.04	3.06
My knowledge of the occupation I plan to enter.	7.37	2.10	6.31	2.54	7.18	2.22
Value of my high school training for the occupation I plan to enter.	5.71	2.67	4.82	2.80	5.55	2.71
Amount of training my high school has provided for the occupation I plan to enter.	5.15	2.73	4.12	2.79	4.96	2.77

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.

Table 86 (Continued)

Variable	Student group[a] Group 1 Mean	Group 1 S.D.	Group 2 Mean	Group 2 S.D.	Total Mean	Total S.D.
Amount of encouragement received from my father to continue my education beyond high school.	4.73	3.47	4.47	3.81	4.68	3.53
Amount of encouragement received from my mother to continue my education beyond high school.	5.43	3.42	5.05	3.74	5.36	3.48
Amount of encouragement received from my father to attend a postsecondary area vocational school.	3.50	3.31	3.05	3.41	3.41	3.33
Amount of encouragement received from my father to attend a four-year college or university.	2.53	3.17	2.31	3.09	2.49	3.15
Amount of encouragement received from my mother to attend a postsecondary area vocational school.	3.18	3.13	3.01	3.42	3.15	3.18
Amount of encouragement received from my mother to attend a four-year college or university.	3.06	3.44	2.62	3.07	2.98	3.38
Amount of encouragement received from my vo-ag instructor to attend a postsecondary area vocational school.	3.15	2.89	2.64	2.49	3.06	2.83
Amount of encouragement received from my vo-ag instructor to attend a four-year college or university.	2.74	3.03	2.18	2.66	2.64	2.97

Table 86 (Continued)

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Total Mean	S.D.
Value of my high school vo-ag courses completed in preparing me for the occupation I plan to enter.	5.60	2.71	4.60	2.63	5.41	2.72
Value of the FFA program in preparing me for the occupation I plan to enter.	5.23	2.98	3.74	2.87	4.95	3.01
Value of my vo-ag courses completed in preparing me to attend a postsecondary area vocational school.	4.77	2.73	3.60	2.95	4.55	2.81
Value of my vo-ag courses completed in preparing me to attend a four-year college or university.	3.90	2.72	2.88	2.78	3.71	2.76
Value of my high school courses in preparing me to attend a postsecondary area vocational school.	4.79	2.70	3.91	2.84	4.63	2.75
Value of my high school courses in preparing me to attend a four-year college or university.	4.51	2.95	3.75	2.94	4.37	2.96
Value of my supervised occupational experience program (Supervised farming or agribusiness placement) in preparing me for the occupation I plan to enter.	5.45	3.07	4.58	3.13	5.29	3.09
My chances of success as a student if I were to attend a four-year college or university and study animal science.	4.48	2.89	3.64	3.06	4.32	2.94

Table 86 (Continued)

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Total Mean	S.D.
My chances of success as a student if I were to attend a four-year college or university and study plant and soil science.	3.96	2.73	2.99	2.71	3.78	2.75
My chances of success as a student if I were to attend a four-year college or university and study agricultural mechanics.	5.45	2.80	4.60	3.04	5.29	2.86
My chances of success as a student if I were to attend a four-year college or university and study agricultural management.	5.14	2.71	4.02	2.72	4.93	2.74
My chances of success as a student if I were to attend a postsecondary area vocational school and study animal science.	4.89	2.88	3.95	3.14	4.72	2.95
My chances of success as a student if I were to attend an area vocational school and study plant and soil science.	4.49	2.76	3.46	2.90	4.29	2.81
My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural mechanics.	6.19	2.71	5.09	3.06	5.98	2.80
My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural management.	5.74	2.76	4.30	2.82	5.48	2.82

APPENDIX F

TABLE OF MEANS AND STANDARD DEVIATIONS FOR AGRIBUSINESS ACHIEVEMENT TEST SCORES

Table 87. Means and standard deviations for agribusiness achievement test scores

Agribusiness achievement test	Student group[a]					
	Group 1		Group 2		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Animal Science	57.64	8.76	54.26	9.40	57.02	8.97
Plant and Soil Science	55.74	9.81	53.76	9.07	55.37	9.70
Agricultural Mechanics	59.66	8.66	57.60	9.88	59.27	8.93
Agricultural Management	58.64	10.41	56.26	10.51	58.20	10.46

[a]Group 1 = Students who lived on a farm.

Group 2 = Students who did not live on a farm.